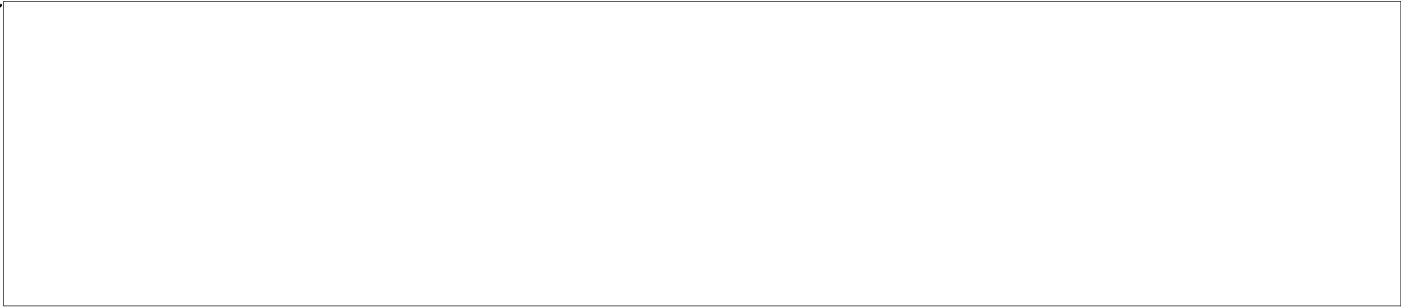


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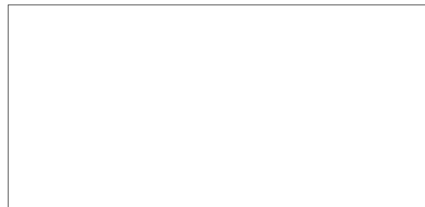
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7 April 1961

ARTILLERY ACADEMY



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PROVISIONAL INSTRUCTIONS
FOR THE COMBAT USE AND FIRING OF
ANTI-TANK GUIDED MISSILES (PTURS)

Leningrad - 1961



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I. General Principles

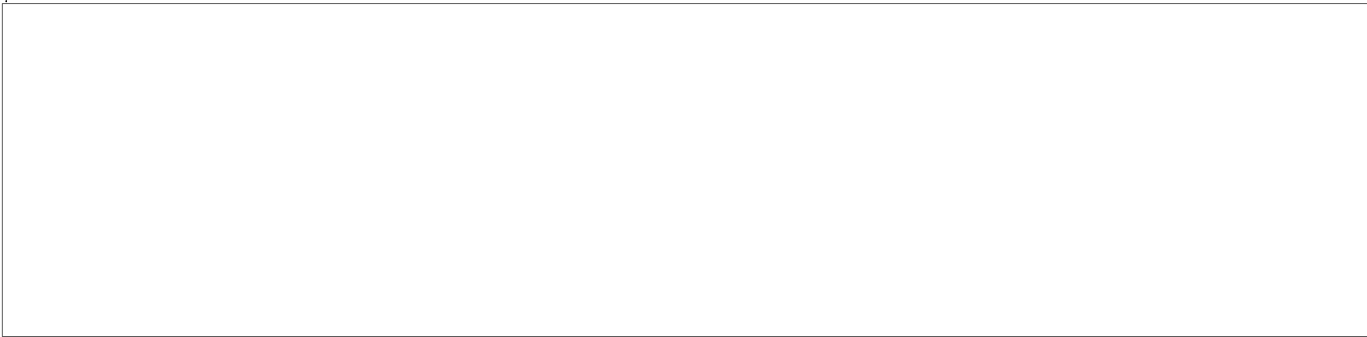
1. Antitank guided missiles are an effective means of combat against tanks and other armored targets at distances of from 600 to 2000 to 2500 meters. In addition, they can be used successfully in defense of the seacoast for destroying enemy landing means and amphibious tanks while they are approaching the shore.

2. Subunits (platoons, batteries) of antitank guided missiles (protivotankovyy upravlyayemyy reaktivnyy snaryad - PTURS) are employed, as a rule, on the most important axes of operations of enemy tanks in the complement of antitank reserves and in the combat formations of motorized rifle battalions (companies), in close coordination with other antitank weapons. The principle of joint use of PTURS subunits with subunits of other antitank fire weapons is the basis of their combat use.

3. The combat formation of a PTURS battery consists of the combat formations of the platoons and the observation post of the battery commander. It must ensure the best conditions for conducting combat against enemy tanks.

A PTURS battery assumes combat formation, as a rule, by platoons. Depending on the terrain conditions and their influence on the nature of the operations of enemy tanks, the platoons are deployed on one line in relation to the expected front of attack by enemy tanks or in echelons, at distances of 800 to 1500 meters from one another (Sketch 1). In organizing the combat formation of a battery, the possibility of mutual fire cover and maneuver by the platoons (combat vehicles) to the battery siting area must be provided for.

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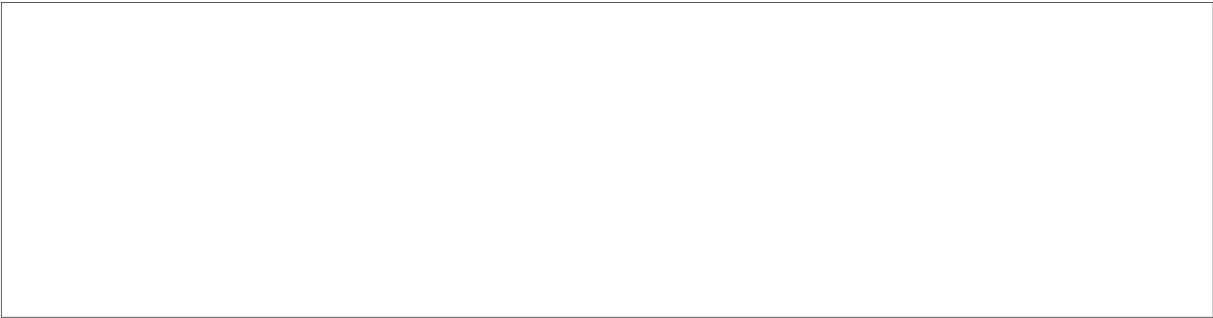
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Sketch 1

Combat formation of a PTURS battery depending on the nature of the operations of enemy tanks on various terrain.

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4. The observation post of the commander of a PTURS battery must ensure a capability to observe the operations of enemy tanks and the operations of friendly platoons. The observation post is usually located in the combat formation of one of the platoons which is operating on the most probable axis of tank approach.

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5. The combat formation of a PTURS platoon consists of the firing positions of the combat vehicles (primary and alternate) and the platoon concealment point [REDACTED]

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Under conditions when it is proposed to use external control (distantionnoye upravleniye), a control point for the commander operator (komandir-operator) of the combat vehicle is selected and prepared for each combat vehicle.

6. In selecting firing positions for the combat vehicles of a platoon, it is necessary to consider the terrain conditions so that the location of the firing positions ensures:

-- the absence (as far as possible) of dead zones in the designated fire sectors;

-- the capability of firing at all ranges, from minimum to maximum, but for not less than 800 meters;

-- the capability of concealed maneuver and occupation of firing positions by combat vehicles and camouflage of them up to the moment of opening fire.

It is advisable to locate the firing positions of PTURS subunits behind natural antitank obstacles.

7. The mutual deployment of the firing positions of the combat vehicles of a platoon should ensure:

-- overlapping cover of the fire sectors of the combat vehicles;

-- conduct of fire by a platoon (by not less than two combat vehicles) in any direction and, as far as possible, mutual fire cover;

-- the best conditions for maneuver by a unit of combat vehicles.

The mutual deployment of the combat vehicles at firing positions should, in addition, preclude their simultaneous destruction by enemy artillery and tank fire.

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8. The combat vehicles of a platoon are deployed at firing positions in echelon to the right (left) (ustup vpravo (vlevo)), or on an angle to the rear (ugol nazad) in relation to the possible direction of the operations of enemy tanks. Line deployment of them is not permitted.

The intervals between the combat vehicles must equal approximately 200 to 250 meters and the distances up to 600 meters.

Besides the primary firing positions, one or two alternate firing positions are selected and, if time is available, prepared for each combat vehicle.

9. When external control is used, the combat vehicles of the platoon can be deployed in places which are not visible from ground observation posts and from enemy tanks, taking into account the possibility of conducting fire over the crest of the concealment.

10. Subunits of antitank artillery (85mm, 100mm caliber), operating jointly with PTURS subunits (platoons), take up combat formation in the areas of the firing positions of the platoons of combat vehicles.

Tanks, designated for combat against enemy tanks and operating jointly with PTURS subunits, must take up combat formation at a distance from the firing positions of a platoon of combat vehicles of not more than 400 to 600 meters.

Subunits of antitank guns (T-12), operating in coordination with PTURS subunits, must take up combat formation at a distance from the firing positions of a platoon of combat vehicles within the limits of 400 to 900 meters.

11. The control points of the commander-operators of the combat vehicles are selected and prepared in places with good conditions for observing the operations of enemy tanks.

The distances between the control points and the firing positions of the combat vehicles can be varied, depending on the capabilities of the system of external control.

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When external control is lacking or when, according to the conditions of the situation, it is not used, the commander-operators of the combat vehicles (gunners) conduct fire while located directly in the combat vehicle.

12. The platoon concealment point is used as a waiting position for the combat vehicles and serves as a concentration site for ammunition and for reloading the combat vehicles.

The platoon concealment point is selected in areas which are concealed from ground and, as far as possible, from aerial observation and also are within the limits of the enemy's radar dead zones, in the immediate vicinity of the firing positions but not further than 200 to 300 meters.

In certain cases, especially when repelling a surprise attack by enemy tanks, when assuming combat formation from the march, etc, a concealment point may not be designated.

II. Control of PTURS Subunits

13. Control of PTURS subunits is carried out by the commanders to whom they are subordinate. They assign combat tasks, organize the coordinated action of PTURS subunits with subunits of other antitank weapons, carry out control of their fire and maneuver during combat, continually control the timeliness of fulfilling fire missions and take all measures for political, combat, materiel-technical, and engineer support of the operations of the PTURS subunits.

Direct control of a PTURS subunit and its firing and maneuver is carried out by the commander of the battery or platoon of combat vehicles.

14. In assigning combat tasks, the PTURS battery (platoon) commander indicates:

-- the possible operations of enemy tanks and the probable axes of tank approach;

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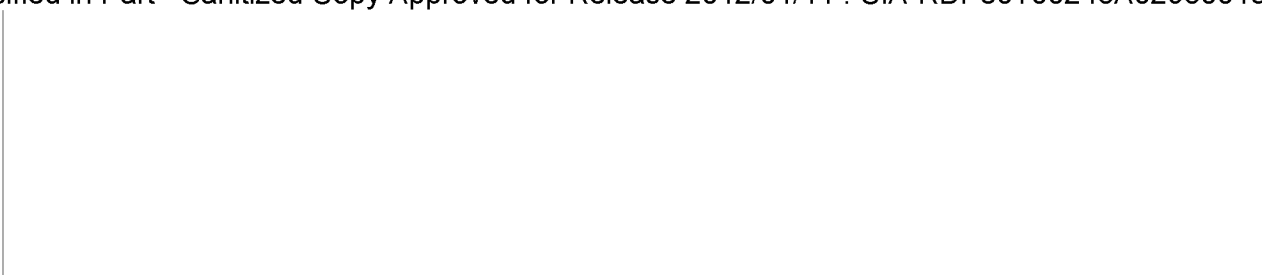
- the tasks of the PTURS subunit;
- the area of the firing positions (primary and alternate);
- the antitank weapons operating in coordination with the PTURS subunit and their tasks;
- primary and secondary zones of fire;
- possible maneuver by the battery (platoon) during combat;
- the order of opening fire on tanks, the general reference points (orientir), and signals for controlling fire and coordinated action;
- measures for protection against the enemy's means of mass destruction;
- the order and time periods for engineer work, the forces and equipment for carrying it out, the locations of antitank mine fields laid in the zone of combat operations of the battery (platoon);
- the time of readiness to open fire.

The commander of a PTURS subunit which has been assigned to the antitank reserve indicates, in addition, the possible lines of deployment, routes of march, and the order of moving up to them.

Depending on combat conditions, combat tasks are assigned on the spot as oral combat orders or individual combat instructions or on a map.

15. The commander of a battery (platoon) of combat vehicles, after receiving a task, assimilates it, determines what measures must be taken immediately to prepare the subunits for combat operations, estimates the situation and issues all necessary preliminary instructions to his subordinates.

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The basic questions relating to the organization of combat are decided by the commander of the PTURS subunit on the spot. In this, he is obliged to:

- study the terrain in the area of the firing positions and the axes of possible operations of enemy tanks;
- clarify the tasks assigned by the senior commander;
- clarify the tasks of the other antitank fire weapons operating jointly with PTURS subunits and coordinate their fire with the fire of the combat vehicles;
- assign tasks to subordinates.

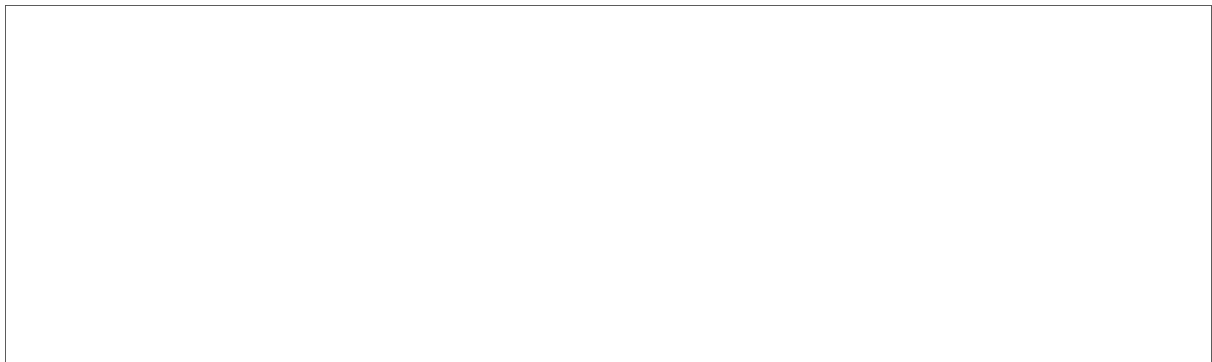
The order of work of the commander of a PTURS subunit after receipt of a task will depend on the type of combat operations, the availability of time, and the conditions under which he will have to fulfil the tasks.

16. When sufficient time is available, in defense, and also, in certain cases, in an offensive battle, the commanders of batteries (platoons) of combat vehicles participate in the reconnoitering conducted by the commanders of the antitank reserves or the commanders of the battalions (batalon).

17. In participating in the reconnoitering and studying of the terrain in the area of the firing positions the commander of a battery (platoon) of combat vehicles determines:

- the locations of firing positions (primary and alternate) for the platoons (for each combat vehicle);
- the location of the observation post of the battery commander and, if necessary, the locations of the control points for the commander-operators of the combat vehicles;
- locations of platoon concealment points;

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-- routes of movement of the combat vehicles up to the primary (alternate) firing positions from the concealment point and routes for maneuver of the battery (platoon) and individual combat vehicles.

In addition, he defines precisely the locations of the firing positions of the antitank weapons operating in coordination.

18. During the reconnoitering of the siting area, questions in the engineer preparation of the combat formations are resolved, the volume of engineer work for preparing firing positions and other elements of the combat formation, and also the manner of preparing routes for maneuver by PTURS subunits and individual combat vehicles are determined and measures are outlined for camouflaging firing positions, observation posts (control points), and concealment points.

Also outlined are measures for the organization of local protection and self-defense (defense) of the combat formation of the PTURS subunit.

19. In studying the terrain on the axes of possible operations of enemy tanks, the commander of the battery (platoon) defines precisely the boundaries of the primary and secondary zones of fire of his subunit and the subunits of antitank weapons operating in coordination and also the reference points indicated by the higher commander. He outlines primary and secondary fire sectors for each combat vehicle, selects their reference points, and determines the distances to them. He determines the dead zones in the fire sectors and the near limits of fire (rubezh prekrashcheniya ognya) ahead of them.

In the primary fire sector, conducting fire without turning the combat vehicle must be ensured. The fire sectors of the combat vehicles must be mutually covered.

20. Reference points are assigned: for target designation and conducting fire, for designating lines of opening fire at the maximum and minimum range and the near limits of fire ahead of dead zones, and also for indicating the zones and sectors of fire to the platoons and individual combat vehicles.

21. During offensive (defensive) combat, when time is not available for reconnoitering, clarification of combat tasks on the spot by the commanders of PTURS subunits, and the resolution of all the questions indicated in paragraphs 15 and 17 through 19 are carried out during

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deployment into combat formation.

22. In assigning combat tasks to subordinates, the commander of the battery (platoon) indicates:

- probable axes of tank approach;
- locations of primary and alternate firing positions;
- primary and secondary fire zones of the platoon and fire sectors for each combat vehicle;
- firing positions of the antitank weapons operating in coordination and their primary and secondary fire zones (sectors);
- the order of opening fire against tanks, reference points, signals for control of fire and coordinated action;
- the location of the platoon concealment point;
- routes of movement to firing positions (primary and alternate) from the concealment point;
- possible maneuver by the platoon or individual combat vehicles during combat and routes for maneuver;
- the order and time periods for engineer preparation of the combat formations;
- measures for organizing self-defense (defense) of the area of the firing positions;
- the location of the observation post of the battery commander and, if necessary, the locations of the control points of the commander-operators of the combat vehicles;
- the procedure for lighting the terrain when conducting combat against tanks under nighttime conditions;

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-- the order of organizing communications.

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23. Under conditions when the time for deploying into combat formation is limited (when deploying from the march), the commander of the platoon of combat vehicles may be limited to indicating probable axes of tank approach, locations of firing positions, of the combat vehicles, their direction of fire, antitank weapons operating in coordination, and their areas of deployment and control signals.

24. For controlling the fire of a PTURS subunit a chart (skhema) of antitank fire of the battery (platoon) is compiled. On the chart of antitank fire of the battery (platoon) are entered the firing positions of every combat vehicle, the firing positions of the antitank means operating in coordination, primary and secondary zones and sectors of fire, dead zones in the primary and secondary fire sectors and the near limits of fire ahead of them, and reference points with the distance to them indicated. On the chart, signals for controlling fire and signals for coordinated action are indicated.

A chart of antitank fire is compiled for the primary and alternate firing positions. The chart is filled out on a sheet of paper or on a map with a scale of 1:25,000

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25. Coordinated action of PTURS subunits with subunits of other antitank fire weapons is ensured by:

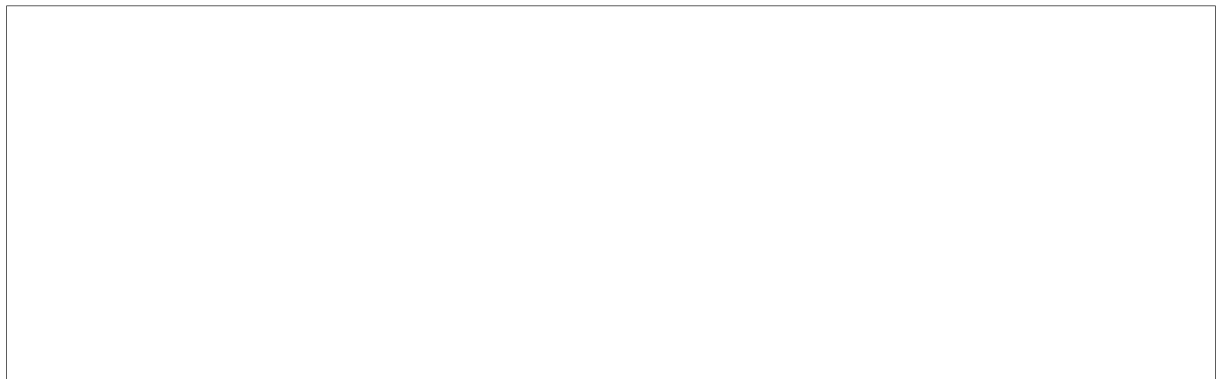
-- advantageous mutual deployment of the combat vehicles and the other antitank weapons when occupying combat formation;

-- coordination of the fire and maneuver of the PTURS subunits and the subunits of other antitank weapons;

-- the presence of a unified system of orientation, the knowledge and skilful use of methods of target designation, and of the established signals for requesting fire;

-- advantageous allocation of enemy targets among the PTURS subunits and the subunits of other antitank weapons by lines and by axes;

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-- the presence of uninterrupted communications.

26. Coordinated action of PTURS subunits with artillery located in covered firing positions and with tactical missiles is ensured by:

-- the inflicting by the artillery and tactical missiles of swift destruction on enemy tanks while the tanks are approaching lines of deployment for attack (counterattack), at the moment of deployment, and during the course of an attack (counterattack) up to the line of the maximum range of fire of the PTURS with the aim of restricting their maneuver and creating conditions to make it difficult to conduct aimed fire from tank weapons at the combat vehicles and also with the aim of inflicting losses on the enemy infantry attacking (counterattacking) together with the tanks;

-- continuous illumination of the terrain during fire by the PTURS against tanks under nighttime conditions;

-- destruction of the enemy's means of illumination which support the attack (counterattack) of tanks under nighttime conditions;

-- coordination of the fire of the PTURS subunits and the artillery in case of a breakthrough by enemy tanks to the depth of our combat formations.

27. Coordinated action of PTURS subunits with engineer subunits is ensured by the creation of antitank minefields in the zones of combat operations of the PTURS subunits and also by preparation and camouflage of the combat formations of the PTURS subunits and preparation of routes for their maneuver.

28. Coordinated action of PTURS subunits with the infantry consists of the destruction of enemy tanks, the rendering of assistance by motorized rifle subunits in combat against enemy infantry, the organization of self-defense (defense) of the PTURS subunits from a sudden attack by the enemy, and the organization of local security.

29. Coordinated action of PTURS subunits with other antitank fire weapons, artillery located in covered fire positions, tactical missiles, engineer subunits and the infantry is organized by the combined-arms

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commanders. They designate appropriate forces and means; coordinate the fire and maneuver of the PTURS subunits and other antitank weapons and the artillery and tactical missiles by location, target and time; organize communications; establish a unified system of orientation, target designation and signalling.

30. The basic means of communications are radio and signal means of communication.

With the aim of supporting the combat operations of the PTURS, communications are organized:

- within the battery (platoon) with every combat vehicle;
- with the commanders (chiefs) under whose subordination the PTURS subunits are located;
- with antitank fire weapons operating in coordination;
- with the artillery which provides illumination of the terrain while tank attacks (counterattacks) are being repelled at night;
- with the rear service elements concerned with questions of supplying ammunition and other types of materiel-technical support.

31. Control of the fire and maneuver of PTURS subunits and individual combat vehicles during the course of combat consists of:

- distribution of the fire of PTURS subunits against groups of operating enemy tanks or distribution of the fire of individual combat vehicles against individual tanks;
- determination of the moment to open fire against enemy tanks and the issuance of appropriate commands or signals for opening fire;
- determination of the time for cessation of fire or shifting of fire to different targets (target) and the issuance of appropriate commands (signals);

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-- determination of the moment for beginning a shift of firing positions or transfer to a different line and determination of the time periods of readiness for conducting fire at the new firing positions (at the new line).

32. In determining the time of readiness for conducting fire from new firing positions (at a new line), one should consider: the distance of the new siting area, the speed of movement of the combat vehicles, depending on the terrain conditions and the condition of the routes for maneuver, and also the time expended in abandoning firing positions and in preparing the combat vehicles for firing from the new firing positions. (Note : Combat vehicles when loaded are capable of traveling on good (improved) roads at a speed of up to 30km per hour, on dirt roads up to 20 to 25km per hour and cross-country at a speed of 10 to 15km per hour.)

In all cases maneuver is executed secretly using first of all natural terrain features and natural camouflage for this purpose.

33. Before the start of an attack (counterattack) by enemy tanks, the combat vehicles are located at primary firing positions or at the concealment point in readiness to move up to the primary (alternate) firing positions.

The commands (signal) to move the combat vehicles up to the firing positions from the concealment point are issued, taking into account that the combat vehicles should be ready to open fire while the tanks are approaching the line of the maximum range of fire of the PTURS. Secret movement of the combat vehicles from the concealment point and occupation of the firing positions, observing all measures of camouflage, is one of the conditions of the successful accomplishment of the task of repelling attacking (counterattacking) enemy tanks.

34. At the beginning of an attack (counterattack) by tanks, the commanders of the batteries of combat vehicles or the commanders to whom the PTURS subunits are subordinate, allocate the groups of attacking (counterattacking) tanks among the PTURS platoons and assign fire missions to the platoon commanders.

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The platoon commander assigns fire missions to the commander-operators of the combat vehicles indicating the specific targets of each combat vehicle.

35. As the enemy tanks approach the line of maximum range of fire of the PTURS, the commander of the PTURS subunit determines the moment for opening fire and issues commands (signals) to open fire. The commander-operators of the combat vehicles conduct the subsequent fire independently, taking into account the existence of dead zones in the fire sectors of the combat vehicles.

If necessary, during the course of combat the commander of a battery (platoon) of combat vehicles or the commander to whom the PTURS subunit is subordinate, changes the order of fulfilling tasks or reorients the platoon (combat vehicle) to fulfil other fire missions.

36. While enemy tanks are approaching the line of the minimum range of the PTURS, the antitank fire weapons which are operating in coordination with the PTURS subunits, on the command (signal) of the commander of the antitank reserve (commander of a battalion or company), shift over to conducting fire against tanks in the dead zone of the PTURS, supporting the withdrawal of the combat vehicles from battle, reloading and occupation of other (alternate) firing positions.

37. After fulfilling the task of repelling the attack (counter-attack) of one group of enemy tanks, the subunit commander shifts the fire, if the range of fire permits, to another group of tanks. In cases when it is impossible to fulfil a new fire mission from the firing positions being occupied, he makes the decision to change firing positions.

38. The commandant's service on behalf of the PTURS subunits, while they are deployed in combat formations and while moving, is organized and carried out by the forces and means of the commanders to whom they are subordinate.

III. Firing by Remote-Controlled PTURS

39. The destruction of attacking (counterattacking) tanks is achieved by the firing of the combat vehicles against individual tanks. Fire against a tank is conducted until its certain destruction is observed.

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Firing the PTURS requires of the personnel a high level of stamina, speed and precision in work.

40. Fire against attacking (counterattacking) tanks, as a rule, is opened from the greatest possible range of fire. Combat vehicles begin to fire on the signal of the battery (platoon) commander and conduct it at the maximum rate.

41. Preparation for firing is carried out before the beginning of a tank attack and includes:

-- reconnaissance and study of the terrain on the possible axes of tank operations;

-- precise definition and selection of reference points and determination of the distances to them;

-- preparation of the missiles (snaryad) instruments (pribor) and combat vehicles;

-- compiling the range card (kartochka ognya) for the combat vehicle.

42. On the range card of the combat vehicle are entered:

-- the station (tochka stoyaniya) of the combat vehicle;

-- the reference points, indicating their numbers and the distance to them;

-- the line of the minimum and maximum range of fire;

-- the primary and secondary fire sectors;

-- the near limits of fire ahead of dead zones and the distances to them;

-- the stations of the guns operating in coordination with the PTURS and their fire sectors.

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[REDACTED]

On the range card of the combat vehicle, the distance to reference points and lines of opening fire are expressed in the time of flight of the missile to them rounded off to whole seconds;

[REDACTED]

43. In studying the terrain, the commander of a combat vehicle determines the dead zones for a given firing position. Ahead of the dead zone from the side of the possible movement of tanks, he determines the near limit of fire. The distance of the near limit of fire from the far limit of the dead zone must comprise:

-- 100 meters for firing at a range of up to 1000 meters;

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-- 150 meters for firing at a range of over 1000 meters.

44. Aiming the missile by height and direction can be carried out simultaneously or consecutively. In aiming by direction, the missile must at all times be held in the line of sight (liniya vizirovaniya).

45. Before firing, the operator determines the range to the target and, in accordance with its magnitude, the time of flight of the missile. In firing at a moving tank, it is necessary, in addition, to consider the movement of the tank during the flight of the missile. The movement of the target during the flight of the missile is determined by means of multiplying the speed of movement of the target by the flight time. If the speed of movement of the target is unknown, then the calculation of its movement is carried out in the following manner:

-- at a range of fire of up to 1000 meters, the movement of the target is not taken into account;

-- at a range of fire of over 1000 meters, the flight time of the missile must be decreased by 1 second when a tank is moving toward the combat vehicle and increased by one second when firing at a tank which is moving away.

46. In firing at a range of up to 1000 meters, the operator, immediately after catching the missile in the field of vision of the sight, guides it to the contour of the target by height and direction and holds it near the aiming point.

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47. In firing at a range of over 1000 meters the operator, after catching the missile in the field of vision, gradually lowers it to the line of sighting. Operators who do not have sufficient practice in guidance are permitted to lower the missile immediately to the line of sighting on the upper section of the turret of the tank. Three to five seconds before hitting the target, the missile must be held on the line of sighting to the aiming point.

In this case the operator, before firing, determines the time required for the missile to reach the line of sighting by means of subtracting 3 to 5 seconds from the overall flight time (at a range of fire of up to 1500 meters 3 seconds are subtracted, at a range of more than 1500 meters, 5 seconds).

While aiming the missile, the operator is obliged to take a reading (otschet) of the flight time of the missile.

48. The middle of the visible silhouette of the target is selected as the aiming point. Before firing a round, the combat vehicle is aimed in the direction of the target.

49. If during the flight of the missile, it is observed that the tank has become concealed in folds in the ground or has been destroyed from another firing position, then the missile is redirected to another target.

50. If, after the first second after firing has elapsed, the missile has not entered the field of vision of the sight or has left it during flight, then a search for the missile is conducted by means of traversing the sight.

51. Firing at night against attacking (counterattacking) tanks is conducted in continuous lighting. Aiming the missile is carried out according to the same rules as in daytime, but in this the commander-operator must take into account that:

- at night the target will appear smaller in dimensions; 50X1-HUM
- the terrain in the zone of illumination will appear wider.

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IV. Combat and Engineer Support of PTURS Subunits

Supplying Ammunition

52. Combat support of PTURS subunits includes: reconnaissance, local security and self-defense (defense), protection from nuclear weapons and other means of mass destruction, and camouflage of the combat formations.

53. Reconnaissance on behalf of the combat operations of PTURS subunits is carried out with the aim of:

-- establishing the nature of the operations of the enemy's tanks, the possible directions of his attacks (counterattacks), the lines of deployment of tanks into combat formation (departure line), the times for beginning an attack (counterattack) and the expected number of tanks on each of the possible axes of their operations;

-- collecting information on the nature of the terrain and on the peculiarities of the relief which influence the combat use of PTURS subunits;

-- observing the situation and operations of friendly troops and the results of the fire of the PTURS subunits.

54. Information on the nature of the operations of enemy tanks is obtained by the forces and means of combined-arms, artillery and air intelligence and is sent in timely fashion to the commanders of PTURS subunits through the commanders to whom they are subordinate.

In all cases the commanders of PTURS subunits personally conduct observation of the operations of enemy tanks.

Information on the nature of the terrain is obtained by the forces and means of the PTURS subunits. Observation of the situation and the operations of friendly troops and of the results of the fire of PTURS subunits is carried out personally by the commanders of the subunits and combat vehicles.

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55. Security of the PTURS subunits is organized by the commanders to whom they are subordinate.

In organizing local security and self-defense (defense) of PTURS subunits, the following are provided for:

- continuous all-around observation, warning, and communications;
- use of the antitank fire weapons operating in coordination with the PTURS subunits for repelling tanks and infantry in the dead zone of the combat vehicles;
- wide-scale employment of antitank obstacles in areas adjacent to the combat formations of the PTURS subunits.

56. Protection from nuclear weapons and other weapons of mass destruction is organized for the purpose of maintaining the combat effectiveness of personnel under conditions of the employment by the enemy of nuclear weapons, toxic chemical agents and bacteriological weapons.

In organizing the antinuclear and antichemical protection of subunits, the following are provided for:

- timely issuance of signals giving warning to the personnel of the danger of nuclear and chemical attack;
- organization of the conduct of radiation and chemical reconnaissance;
- use of the protective features of the terrain for the deployment of the personnel and combat equipment of the PTURS subunits;
- preparation of cover for personnel and combat equipment for protection from the effects of nuclear, chemical and bacteriological weapons;
- provision to the personnel of the means of antichemical protection and creation of a mobile reserve of the latter;

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-- preparation of means for eliminating the results of the employment by the enemy of nuclear, chemical and bacteriological weapons. 50X1-HUM

57. The signal giving warning of the danger of nuclear attack is given on the instructions of the battery (platoon) commander by radio, sound, or light means.

The signal giving warning of chemical attack is given by the chemical observation post of the antitank reserve or of the motorized rifle battalion.

58. On the signal of danger of nuclear attack, the crews of the combat vehicles which are conducting fire bring the antichemical protection equipment to the "ready" ("nagotove") condition and continue to carry out the assigned task. Crews which are not conducting fire occupy the prearranged cover on the signal of danger of nuclear attack.

At the signal giving warning of chemical attack, combat crews bring the antichemical protection equipment to the "combat" ("boyevoye") condition and continue to carry out the assigned task.

59. Radiation and chemical reconnaissance on behalf of PTURS subunits is conducted by the chemical observation post of the antitank reserves or motorized rifle battalions. In addition, radiation and chemical reconnaissance in the PTURS subunits is conducted by the observers of the operations of enemy tanks. The observers are provided antichemical protection equipment, chemical and radiation reconnaissance devices, and equipment for signalling warning of chemical attack.

60. Depending on the conditions of the situation, contaminated sectors of terrain are bypassed or crossed in the combat vehicles. Areas of radioactive contamination are crossed in areas with a radiation level of not more than 10 to 15 roentgens, in which the irradiation of the personnel during movement will not exceed the maximum permissible dose.

61. In order to eliminate the results of the employment of nuclear weapons and other weapons of mass destruction by the enemy, the battery (platoon) commander is obliged to:

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-- determine the numbers of personnel and combat equipment fit
for combat; 50X1-HUM

-- restore disrupted communications with the platoons (combat
vehicles) and higher commanders;

-- organize the extinguishing of fires;

-- organize the rendering of medical assistance to victims, the
conduct of partial medical treatment of personnel, and decontamination,
degassing, and disinfection of clothing, equipment, combat vehicles,
and engineer structures.

Partial medical treatment and partial degassing, decontamination,
and disinfection are carried out in the combat formations, without
taking the personnel away from the accomplishment of the combat task.

62. Engineer support of the operations of PTURS subunits includes:

-- engineer preparation of the combat formations;

-- preparation of approach routes to firing positions and routes
for the maneuver of PTURS subunits;

-- laying of antitank mine fields in the zone of operations of the
PTURS subunits;

-- camouflage of elements of the combat formation of the PTURS
subunits.

63. The firing positions are equipped with superficial trenches
for the combat vehicles, taking into account the ensuring of all-around
fire, and with slit trenches for cover of the personnel. On terrain
where the use of tanks by the enemy is limited and there is no necessity
to have all-around fire the firing positions are equipped with deeper
trenches with a narrow sector of fire and slit trenches for the personnel.

At concealment points deep dugout shelters for the combat vehicles,
magazines for missiles, and blindages or light shelters for cover of the
personnel are prepared. 50X1-HUM

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64. Roads and cross-country routes prepared by engineer-road building (inzhenerno-dorozhnoye) subunits are used for maneuver of PTURS subunits. Cross-country routes from roads of general usage to the combat formations of the PTURS subunits are prepared.

65. In order to cover the combat formations of the PTURS subunits and ensure the most effective destruction of enemy tanks, two belts of mine fields are laid as a rule. The first belt of mine fields is laid at a distance of 1.5 to 2.0 kilometers from the firing positions, calculated in order to ensure the conduct of effective fire against enemy tanks by the combat vehicles; the second belt is ahead of the dead zone of the combat vehicles in order to ensure the conduct of effective fire by the antitank weapons operating jointly with the PTURS subunits and to cover their combat formations.

66. In order to camouflage the PTURS subunits, the camouflaging features of the terrain, local materials, standard camouflage materials (tabelnaya maska), and the shelters for the combat vehicles and personnel are used. In case of deployment in terrain which is devoid of natural concealment, camouflage of combat formations is carried out by means of artificial scarring of the terrain in combination with camouflage with standard camouflage materials.

67. Supplying PTURS subunits with ammunition (missiles) is carried out by the artillery armament service (sluzhba artilleriyskogo vooruzheniya) of the units and large units.

Commanders of the PTURS subunits are obliged to make timely reports to the commander to whom they are subordinate on the expenditure of, and requirements for, missiles.

The delivery of missiles to PTURS subunits is carried out directly in the areas of their firing positions -- at the concealment points of the platoons. PTURS subunits which are operating with motorized rifle battalions and the antitank reserves of motorized rifle regiments are furnished with missiles by the transport of the motorized rifle regiments. PTURS subunits which are operating in the complement of division and army antitank reserves are supplied with missiles by the transport of the division or the individual antitank unit in which the PTURS subunits are organizationally included.

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At the platoon concealment points, there must be a constant reserve of missiles, sufficient, at least, for one full loading of each combat vehicle. 50X1-HUM

When on the march, PTURS subunits are allocated transport which travels with them and carries missiles for not less than one loading of each combat vehicle.

V. Operations of PTURS Subunits on the Offensive and in Defense

68. On the offensive and in defense, PTURS subunits are used in the complement of regiment, division, and army antitank reserves or in motorized rifle battalions (companies).

69. PTURS subunits operating in the complement of the antitank reserves jointly with subunits of other antitank weapons are employed:

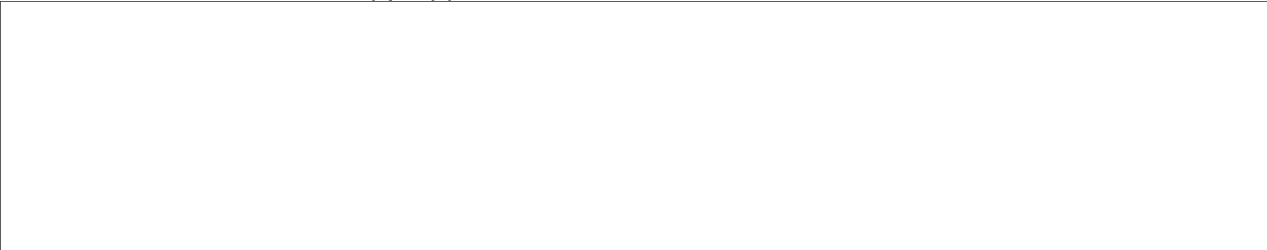
-- on the offensive: for repelling counterattacks by enemy tanks; ensuring the consolidation of captured lines and important objectives during the course of the offensive; covering the commitment to combat of second echelons (reserves); and also for covering areas (sectors) which have been subjected to nuclear strikes by the enemy and protecting the flanks of advancing large units and units (subunits);

-- in defense: for strengthening the antitank defense of the combined-arms units (subunits) of the first echelon; for destroying tanks and other armored targets which are brought by the enemy into the breach created by the enemy's nuclear strikes and for destroying tanks which have broken through into the depth of the combat formations; and also for covering the deployment of second echelons (reserves) from tank attacks by the enemy and protecting the flanks and the intervals between the defense areas of units and subunits.

70. PTURS subunits operating in motorized rifle battalions (companies) on the offensive, jointly with other antitank weapons, are employed for repelling counterattacks by enemy tanks in the departure position for the offensive and for consolidating objectives captured during the course of offensive combat.

In shifting to defensive operations, they conduct combat with attacking enemy tanks ahead of our main line of resistance or in the

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depth of it, and also destroy tanks in the intervals between battalion (company) defense areas and in the breaches created by enemy nuclear strikes.

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71. It is advisable to unite the PTURS subunits and subunits of the other antitank weapons assigned for operations in the complement of the antitank reserves, and those which are used in motorized rifle battalions, into antitank fire groups. Each antitank fire group should include a platoon of combat vehicles and a platoon of other antitank fire weapons. A platoon of combat vehicles should constitute the basis of an antitank fire group.

72. Antitank fire groups organized within the antitank reserves or motorized rifle battalions, when deployed in combat formation, are dispersed along the front and echeloned in depth so that all antitank fire groups will not be destroyed simultaneously by one nuclear burst of small or medium yield.

The mutual deployment of antitank fire groups must ensure:

-- firing capability of a majority of the platoons of combat vehicles on the probable axes of attack by enemy tanks;

-- mutual fire support among antitank fire groups;

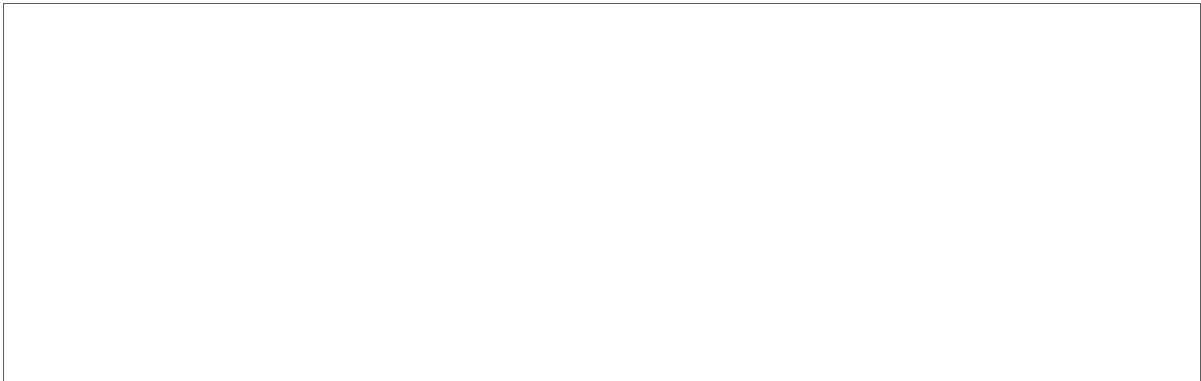
-- perimeter defense of every antitank fire group and the antitank reserve or battalion as a whole;

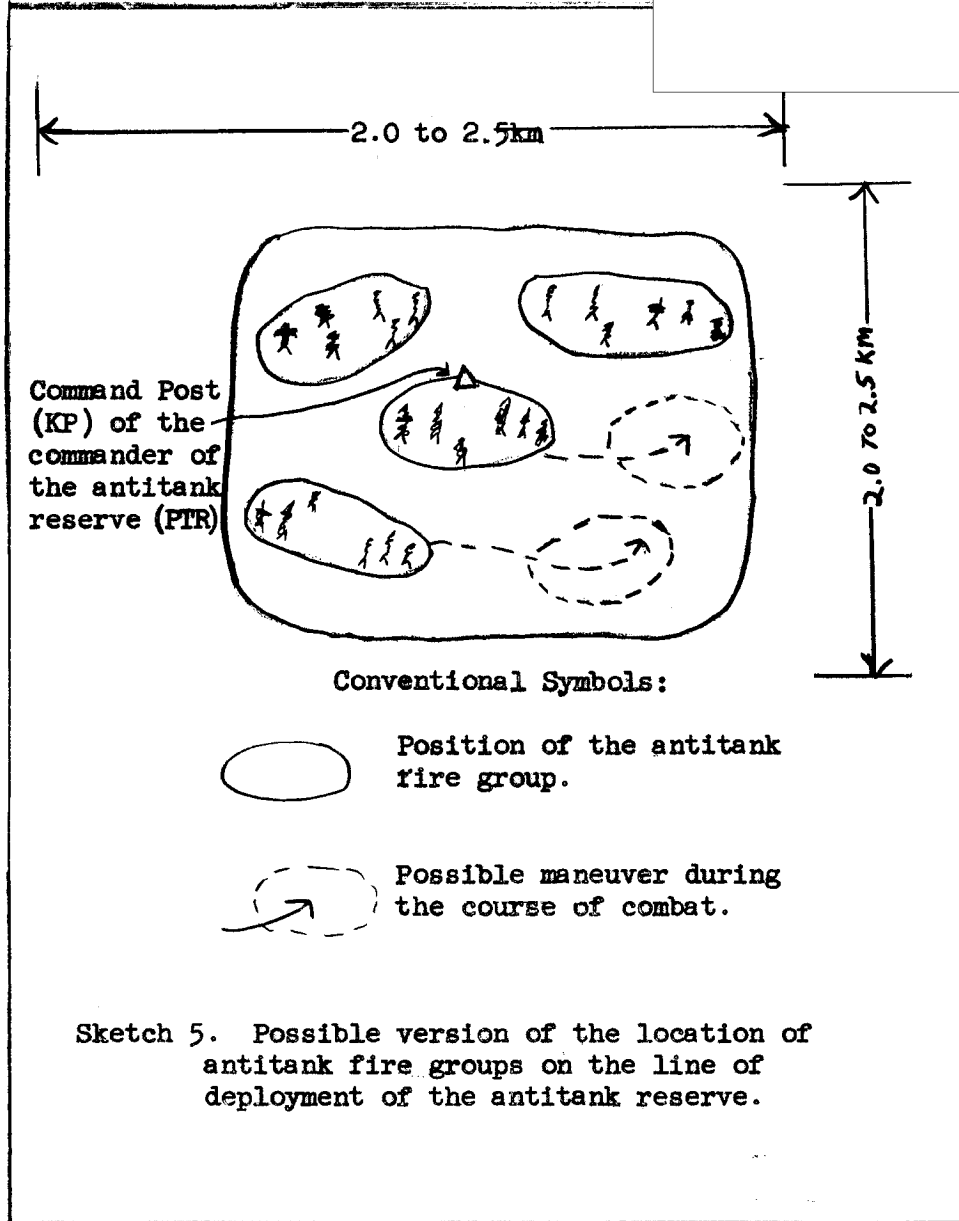
-- maneuver of units of the antitank fire groups within the area occupied by them.

The deployment of antitank fire groups in battalions (companies) while they are shifting to defensive operations must, in addition, ensure cover by PTURS fire of the intervals between battalion (company) defense areas.


A version of the deployment of antitank fire groups in the antitank reserve while it is located at the line of deployment is given in Sketch 5.

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73. In offensive combat, the PTURS subunits attached to motorized rifle battalions take up combat formation in the departure area for the offensive in readiness to repel possible counterattacks by enemy tanks.

During the course of an offensive, the PTURS subunits are transferred to the combat formations of a battalion with subunits of the second echelon. In meeting the counterattacking enemy tanks, PTURS subunits move forward, occupy combat formations, and, together with other antitank fire weapons and the tanks attached to the battalion, repel the counterattacking enemy.

74. Before the start of an offensive, the PTURS subunits operating in the complement of the antitank reserves are deployed in areas indicated by the higher commander in readiness for maneuver to strengthen the antitank defense of the first echelons of large units (units) and also for covering sectors which have been subjected to the effects of enemy nuclear weapons.

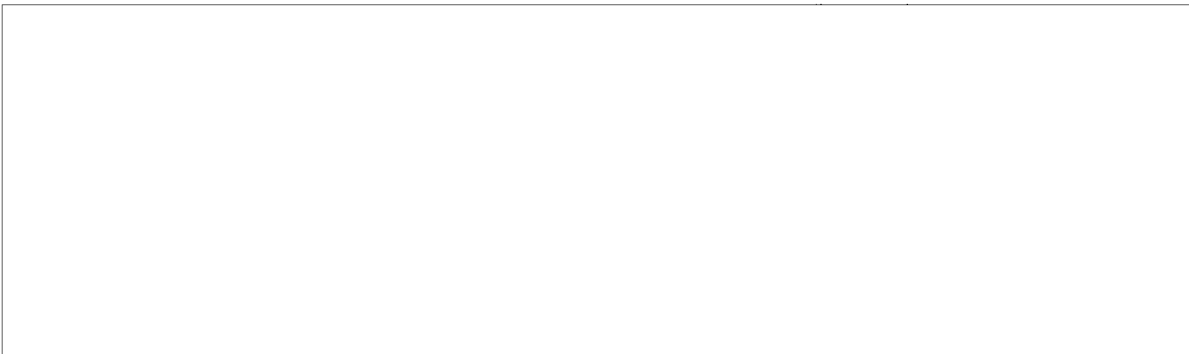
75. At the beginning of an offensive and during its course, the PTURS subunits in the complement of the antitank reserves are moved along indicated routes behind the first echelons of large units and units (subunits) in readiness for deployment on probable axes of tank approach.

76. When the threat of the enemy conducting a tank counterstrike (counterattack) appears, the PTURS subunits in the complement of the antitank reserves move up to the probable axis of tank approach and take up the combat formation.

At the beginning of the counterstrike (counterattack) they conduct combat with the enemy tanks in coordinated operation with the other antitank weapons of the reserve. Mining of the terrain in the zone of operations of the PTURS subunits is carried out by mobile obstacle detachments.

77. In a meeting engagement, PTURS subunits operate in the complement of army, division, or regiment antitank reserves and also are assigned for reinforcing forward detachments, advance guards (avangard) (advance and flank detachments (golovnoy i bokovoy otryad)).

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78. In a meeting engagement, PTURS subunits, together with other antitank weapons, can be employed for fulfilling the following tasks:

-- covering the operations of the advance guard (advance and flank detachments), while these are approaching, occupying and holding an advantageous line from possible attacks by enemy tanks;

-- supporting the capture and holding of advantageous lines by forward detachments;

-- covering the deployment of the main forces of large units (units) and supporting their operations to rout the enemy by conducting combat with tanks and other armored targets ahead of the front of deployment and, principally, on their flanks.

79. The success of PTURS subunits in combat with enemy tanks in a meeting engagement will depend on the timeliness and speed of their deployment in combat formation. PTURS subunits must be deployed in combat formation and be ready to conduct fire before the enemy tanks reach the line of maximum range of fire of the PTURS.

80. Timeliness and speed of deployment of PTURS subunits in combat formation in a meeting engagement is ensured by:

-- correct determination of the location of batteries and platoons of combat vehicles in the march formations of combined-arms units and subunits and in antitank reserves executing a march in anticipation of a meeting engagement;

-- efficient organization of reconnaissance of the operations of enemy tanks and timely transmittal of these data to the batteries (platoons) of combat vehicles and also continuous conduct of reconnaissance of the terrain with the aim of determining advantageous positions for the deployment of subunits in combat formation on axes of probable tank approach;

-- assignment of combat tasks during the approach to possible lines of encounter with the enemy.

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81. PTURS subunits, operating with a forward detachment, advance guard (advance or flank detachments), move by platoons. The location of the platoons of combat vehicles is determined by the commanders of the forward detachment, advance guard (advance or flank detachment). Distribution of the combat vehicles of the battery (platoon) by columns is not advisable.

82. PTURS subunits in the columns of the antitank reserves, as a rule, are located with regard for the antitank fire groups which have been created.

83. Information on the operations of enemy tanks on behalf of PTURS subunits in a meeting engagement is obtained by the reconnaissance elements of the forward detachment, advance guard (advance or flank detachment), reconnaissance patrols and also by the other forces and means which are at the disposal of the large unit (unit) executing the march in anticipation of a meeting engagement. Necessary data on the nature of the operations of enemy tanks are transmitted in timely fashion to the commanders of PTURS subunits by the commanders to whom they are subordinate.

Reconnaissance of the terrain is organized and conducted by the commanders of the PTURS subunits. In this, possible lines of deployment in combat formation are estimated on a map beforehand. The locations of firing positions are precisely determined on the terrain during approach to the line of deployment and during the course of deployment in combat formation.

84. The combat tasks of the PTURS subunits, as a rule, are entered on a map during the approach to the planned line of deployment. With the initiation of combat by the forward subunits, they clarify these on the spot. Commanders of platoons assign combat tasks to the commander-operators of the combat vehicles, indicating:

- the probable axes of tank approach;
- the locations of firing positions;
- the fire sectors and primary directions of fire;

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- the antitank means operating in coordination and their locations;
- the control signals.

85. With the initiation of combat by the forward detachment, advance guard (advance or flank detachment), the PTURS subunits operating in their complement take up combat formation from the march and inflict destruction on the enemy tanks, thus supporting the capture and holding of an advantageous line until the arrival of the main forces.

In this, the commanders of the platoons of combat vehicles must have the broadest initiative in selecting objectives for destruction and the time for opening fire.

86. The deployment of the main forces of a large unit (unit) and their operations to rout the enemy are covered from enemy tank attacks from the flanks and from the front by the antitank reserves. In this the PTURS subunits operating in coordination with the other antitank means of the reserve are moved up to the probable axes of tank approach and inflict destruction on the enemy tanks presenting the greatest threat to the operations of the main forces.

87. In shifting the main forces to a decisive offensive or to defensive operations, the PTURS subunits operate as under conditions of offensive or defensive combat.

88. In offensive combat involving the crossing of water barriers, PTURS subunits can be employed for fulfilling the following tasks:

- covering the forcing of water barriers by the forward detachment or advance guard (advance detachment), destroying tanks located on the opposite bank of the water line in the crossing area of the forward detachment or advance guard (advance detachment);

- when a bridgehead is captured, protecting its holding and widening by inflicting destruction on counterattacking enemy tanks;

- supporting the forcing of the water barrier by the main forces and their offensive on the opposite bank.

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89. In the forcing of a water barrier from the march by the forward detachment or advance guard (advance detachment), the PTURS subunits operating in their complement, depending on the nature of the operations of enemy tanks, the tasks, and the width of the water barrier, cross together with the forward subunits, or after they have occupied a bridgehead.

90. When there are no enemy tanks on the opposite bank at the forcing site, PTURS subunits, as a rule, cross together with the forward subunits of the infantry and the subunits of antitank artillery. Combat vehicles on the chassis of armored reconnaissance-patrol vehicles (bronirovannaya razvedyvatelno-dozornaya mashina --- BRDM) force the water barrier independently.

When there are enemy tanks on the opposite bank in the crossing area and when the width of the water barrier is less than 1,000 meters, PTURS subunits inflict destruction on the tanks while remaining on their own bank. In this, firing positions are occupied as near as possible to the edge of the water, mainly on the flanks of the forward subunits which are crossing.

The PTURS subunits which have remained on their own bank force the water barrier when a bridgehead on the opposite bank has been occupied to a depth of not less than 1,000 meters. The crossing of PTURS subunits is carried out, as a rule, by platoons.

Together with the platoons of combat vehicles which are crossing, missiles for them, sufficient for at least two loadings of each combat vehicle, must be taken across.

91. The PTURS subunits which have crossed occupy firing positions and, together with other antitank weapons, conduct combat with counter-attacking enemy tanks ahead of the front and on the flanks of the forward subunits which have occupied a bridgehead and are conducting combat to widen it.

92. PTURS subunits operating in the complement of the antitank reserves cross to the opposite bank before the main forces of the large unit (unit) begin to cross, take up combat formation on an advantageous line and, together with the other antitank weapons of the reserve, protect the crossing of the main forces and their further operations to rout the enemy.

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93. The employment of PTURS subunits for combat with enemy tanks under night conditions is possible only with constant artificial lighting of the terrain on the axes of tank operations.

Artillery illuminating shells and mortar shells (mina) are used to light the terrain.

94. For fulfilling fire missions at night, the commanders of PTURS subunits, in addition to resolving the questions indicated in paragraph 15, must before nightfall:

-- define precisely the location of their troops in primary and secondary fire sectors;

-- study and prepare routes for the movement of the combat vehicles up to firing positions from the concealment point and routes for possible maneuver by subunits or individual combat vehicles and, if possible, set up lighted reference points on the routes;

-- define precisely the procedure for requesting and conducting fire by artillery which is located in covered firing positions, for constant illumination of the terrain at the beginning of an attack (counterattack) by enemy tanks, and for destroying his means of illumination.

If, according to the conditions of the situation, there will be no daylight time, then the work in studying the terrain in the direction of the operations of enemy tanks, the precise definition of tasks, the selection of reference points, etc, must be conducted in artificial lighting.

95. Ground features of a light tone with sharp outlines should be designated as reference points, so that they are readily visible on the terrain under artificial lighting.

96. In organizing constant lighting of the terrain with the use of artillery illuminating shells (mortar shells) and to ensure the best conditions for observation and conduct of PTURS fire against attacking (counterattacking) tanks, it is necessary that the bursts of the illuminating shells (mortar shells) should occur somewhat behind the moving enemy tanks.

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The zone of the terrain which must be constantly lighted is indicated by four points (tochka). The far (right and left) points are first indicated and then the near ones.

97. In using PTURS subunits in mountainous-wooded and wooded-swampy terrain, and also under urban conditions, it is necessary to take into account:

-- the absence of well examined sectors of terrain to an extent commensurate with the maximum range of fire of the PTURS;

-- the limited number of convenient places for deployment of the PTURS subunits in combat formation;

-- the limited possibility of the mass use of tanks by the enemy.


98. Firing positions for PTURS subunits and combat vehicles are selected in locations from which the operations of tanks can be observed for the entire spectrum of their ranges of fire, but for not less than 800 meters. When such conditions are not present, firing positions can be designated so that individual sectors of the terrain can be observed from them on the routes of movement of the tanks (sectors of roads, heights, slopes of heights, edges of forests, urban areas, etc) to an extent of not less than 150 to 200 meters.

99. Under conditions of mountainous-wooded terrain, firing positions for PTURS subunits are located at bends in roads ahead of straight sectors and on mountain plateaus from which individual sectors and junctions of roads, mountain passes, crossings over mountain rivers, gorges, etc, can be observed within the limits of the range of fire of the PTURS.

100. Under conditions of wooded-swampy terrain, firing positions for PTURS subunits are selected, as a rule, on the edge of a forest, in wide lanes in forests, and in cleared spaces.

101. Under urban conditions, firing positions for PTURS subunits are selected with consideration for conducting fire along wide boulevards (streets).

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