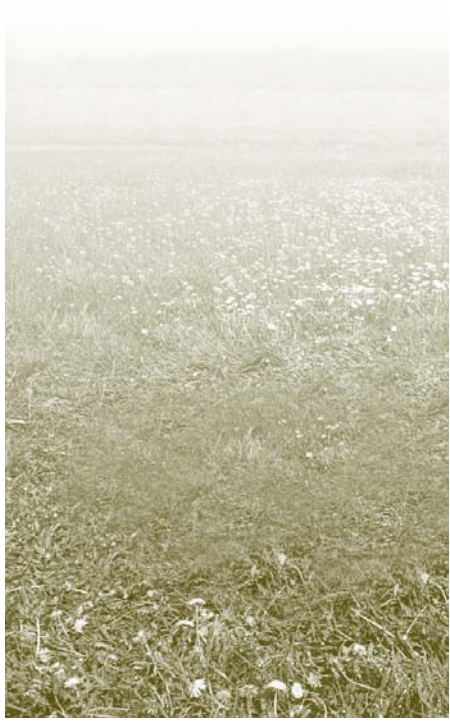


LAND FORCES WEAPONS

export catalogue

Rosoboronexport

Land Forces Weapons
Export Catalogue

This Catalogue has been prepared by the Rosoboronexport's Land Forces Department and Media & PR Service with valuable support of Russian defence enterprises.

Additional information on the equipment described within can be requested at the Rosoboronexport central office and its representations abroad.

Rosoboronexport State Corporation
21, Gogolevsky Blvd, Moscow, 119992, Russia,
Phone: +7-095 202 6603
Fax: +7-095 202 4594
www.rusarm.ru

CONTENTS

GLOSSARY

ACV	Airborne Combat Vehicle
AMD	Anti-Missile Defence
APC	Armoured Personnel Carrier
APDS	Armour-Piercing, Discarding Sabot
APFSDS-T	Armour-Piercing, Fin-Stabilised, Discarding Sabot, Tracer
APT	Armour-Piercing, Tracer
AT	Anti-Tank
ATGM	Anti-Tank Guided Missile
ATGW	Anti-Tank Guided Weapon
C2I	Command, Control and Intelligence
C3	Command, Control and Communications
CLGP	Cannon-Launched Guided Projectile
CP	Command Post
CRV	Combat Reconnaissance Vehicle
CTV	Control and Test Vehicle
CV	Combat Vehicle
ERA	Explosive Reactive Armour
EW	Electronic Warfare
FCS	Fire Control System
FT	Fragmentation Tracer
GM	Guided Missile
HEAT	High Explosive, Anti-Tank
HEF	High Explosive, Fragmentation
HEI	High Explosive, Incendiary
HF	High Frequency
IFV	Infantry Fighting Vehicle
IIT	Image Intensifying Tube
INS	Inertial Navigation System
IR	Infra-Red
MBT	Main Battle Tank
MG	Machine Gun
MRS	Multiple Rocket System
NBC	Nuclear, Biological and Chemical
NVG	Night Vision Goggles
RAP	Rocked-Assisted Projectile
SP	Self-Propelled
SPG	Self-Propelled Gun
TL	Transport-Loader
TLC	Transport-Launch Container
TNT	Trinitrotoluene
UHF	Ultra High Frequency
VHF	Very High Frequency

FOREWORD

The Rosoboronexport State Corporation in its Land Forces Weapons export catalogue provides brief descriptions of up-to-date Russian-made combat and support systems offered for land forces and special operations units. The catalogue also includes data on such systems meeting NATO standards.

It gives a concise overview of the most important land weapon systems and munitions listed in the following sections:

- armour;
- missile and artillery;
- engineer vehicles;
- infantry weapons;
- special weapons.

Russian land forces weapons embody advanced military technologies quite competitive in the international arms market. Such combat-proven products, as the Kalashnikov assault rifles, BMP-3 infantry fighting vehicle, Smerch and Grad multiple rocket launchers, have by right become international best sellers.

The catalogue also lists a number of modernisation options for vintage Soviet-made war materiel operated by land forces in the ex-USSR republics and in many countries of Europe, the Middle East, Africa, Asia and Latin America.

In most cases Rosoboronexport's customers may specify composition of weapon systems, ammunition types and modernisation options. Besides arms delivery, Rosboronexport renders technical assistance in:

- operating, maintaining, repairing and servicing of the supplied materiel;
- establishing or retrofitting of defence production facilities and military installations, such as manufacturing plants, repair shops, servicing and training centres, command and control systems, etc.

The Rosoboronexport's Land Forces Weapons export catalogue is addressed to army and special operations commanders, defence procurement specialists and military experts seeking reliable data on corresponding Russian weapons and equipment.

LAND FORCES WEAPONS

ARMOUR

T-90S

Main Battle Tank

Basic specifications	
Combat weight, t	46.5
Crew	3
Specific ground pressure, kg/sq. cm	0.94
Max road speed, km/h	60
Cruise range, km	500-650
Specific engine power, hp/t	21.5
Engine type	multi-fuel diesel V-92S2
Engine power, hp	1,000
Obstacles negotiated:	
gradient, deg	30
wall, m	0.85
trench, m	2.8
fording, unprepared/with snorkel, m	1.8/5
Armament:	
2A46M smoothbore gun/missile launcher:	
calibre, mm	125
ammunition, rds	42 (22 in autoloader)
Coaxial machine gun:	
calibre, mm	7.62
ammunition, rds	7,000
Anti-aircraft remotely-controlled machine gun:	
calibre, mm	12.7
ammunition, rds	300
Guided missile system	9K119
Stabiliser	two-plane 2E42-4
Fire control system	sight/range-finder with ballistic computer

General description

The T-90S main battle tank is a deeply modernised variant of the legendary T-72 MBT family embodying latest achievements in tank-building, yet having undergone no profound changes in configuration.

Thanks to a number of hi-tech design features, the tank has acquired advanced combat and operational capabilities.

Features

- high reliability of all units and assemblies, as well as the tank as a whole
- formidable main gun and guided missiles
- up-to-date fire control system
- enhanced combat manoeuvrability
- enhanced survivability under attacks of HE and APDS projectiles
- optronic suppression system
- maximal similarity to the T-72 MBT family providing ease and cost reduction of crew training

The integral explosive reactive armour, coupled with the Shtora-1 optronic suppression system, minimises the tank's vulnerability to anti-tank artillery's HE and APDS munitions, and guided missiles.

T-80U

Main Battle Tank

General description

The T-80U MBT is a derivative of the T-80 family of gas turbine-powered tanks.

The vehicle is powered by an improved engine, and features a main gun, an armament stabiliser, and a guided weapon system comprising combined (day/night) commander's and gunner's surveillance/sighting systems, and an automated fire control system. The T-80U is equipped with the 9K119 Reflex guided missile system effective against a tank-size target at 5,000 m. The integral adjustment control system enables the crew to adjust the main gun without leaving the tank.

Features

The tank's high protection is provided by reinforced layered armouring of the hull and the turret, coupled with integral explosive reactive armour. Armour protection of the frontal arc is effective against APDS and high-explosive antitank rounds. The tank features a quick-reaction automatic fire-extinguishing and NBC collective protection systems. Rubber screens on the front part of the turret distort the turret shape and present extra protection against antitank ammunition.

The 1,250-hp GTD-1250 multi-fuel gas turbine engine provides the vehicle with excellent acceleration and agility. In addition, the GTA-18A auxiliary power unit can power key systems, such as FCS, stabiliser, communication aids, etc., without starting up the main engine.

The T-80U is fitted with a smoke-screen laying system, self-digging equipment and a mine-roller. At customer request, the tank can be outfitted with the Shtora-1 optronic suppression system, air conditioner, asphalt-going pads, etc.

Basic specifications	
Combat weight, t	46
Crew	3
Specific ground pressure, kg/sq. cm	0.93
Max road speed, km/h	70
Fuel endurance, km	500
Engine:	
type	gas-turbine GTD-1250
power, hp	1,250
Obstacles negotiated:	
gradient, deg	32
roll, deg	30
vertical obstacle, m	1
trench, m	2.85
fording, m	
with/without preparation	5/1.8
Armament:	
2A46M-1 smoothbore gun/missile launcher:	
calibre, mm	125
ammunition, rds	45 (28 in autoloader)
Coaxial machine gun:	
calibre, mm	7.62
ammunition, rds	1.250
Anti-aircraft machine gun:	
calibre, mm	12.7
ammunition, rds	500
Guided missile system	9K119 Reflex
Stabiliser	2E42 two-planes
Fire control system	automated, with ballistic computer

T-72M1

Main Battle Tank Upgrade

Purpose

The upgraded variant is optimised in terms of cost-effectiveness and provides a two-fold increase in the T-72M1's combat capabilities.

Modernisation programme

The T-72M1 upgrading package comprises the following systems:

- guided weapons;
- remotely controlled anti-aircraft machine gun;
- multi-channel sight with automatic target tracking capability;
- increased accuracy armament stabiliser;
- combined (day and night) commander's sight;
- 2A46M upgraded gun;
- ERA;
- active protection suite;
- automatic aerosol screen-laying system;
- electromagnetic mineclearing system;
- satellite navigation equipment;
- advanced radio communications means;
- 1000hp engine;
- modernised chassis with stamped tracks and detachable track shoes for moving on asphalt.

Basic specifications

	T-72M1	T-72M1 upgraded
Combat weight, t	43	45
Power-to-weight ratio, hp/t	18.1	22.2
Average speed on dry unpaved roads, km/h	35-40	40-45
Max road speed, km/h	60	65
Armament:		
gun	125mm smoothbore 2A46	125mm smoothbore gun 2A46M
guided weapons system	none	available
anti-aircraft machine gun	open-type, manual	close-type, electric, remotely-controlled
Main gunner's sight	TPD-K1	combined with optical, thermal imaging, ATGM laser guidance, and laser range-finder channels
Alternate sight	none	TPD-K1
Field of view stabilisation	dependent in one plane	independent in two planes
Target identification range at night, m	600	3,000-3,500
Ballistic computer	none	digital
Automatic target tracking	none	installed
Navigation equipment	GPK-59 gyro compass	GPS
Type and power of engine, hp (kW)	V-46-6, diesel 780 (573)	V-92S2, diesel 1,000 (735)

T-55 and T-62

Tank Upgrades

Purpose

Dozens of thousands of the T-55/T-62 MBTs are in service with armies of over 50 countries. Programmes for partial and comprehensive modernisation of these tanks are developed. The upgrading can considerably improve their combat effectiveness as far as firepower, armour protection, mobility and combat controllability are concerned.

Modernisation programme

The modernisation programmes provide for introduction of an advanced fire control system, additional armour with integrated last generation explosive reactive armour, a more powerful engine, upgraded transmission and new communications and navigation equipment.

Basic specifications

	T-55 upgrade	T-62 upgrade
Combat weight, t	43	43
Crew	3	3
Dimensions, mm:		
length (gun forward)	9,100	9,460
width (over skirts)	3,400	3,400
height (to turret top)	2,260	2,390
ground clearance	470	430
Specific ground pressure, kg/sq. cm	0.88	0.89
Armament:		
gun type and calibre, mm	rifled, 100 (smoothbore, 125) or NATO standard, 120	smoothbore, 125 or NATO standard, 120
number and calibre of machine guns, mm	1 x 7.62; 1 x 12.7	1 x 7.62; 1 x 12.7
guided weapons sysytem	installed	installed
Fire control system	automated with digital ballistic computer	
Loading system	autoloader in rear armoured turret bustle	
Gun combat rate of fire, rds/min	up to 12	up to 12
Ammunition allowance for the gun, rds	22 in autoloader	
Gun stabiliser	two-plane, electromechanical	
Protection	integrated ERA, T-80U class	
Anti-mine electromagnetic system	none	installed
Engine		
type	multifuel diesel	multifuel diesel
power, hp	690	690, 730 or 1,000
Max speed, km/h	50	50
Endurance, km	500	610

BMPT

Tank Support Combat Vehicle

Mission

The BMPT tank support combat vehicle is designed to be used within tank formations as a tank destroyer. It is fitted with a powerful armament and excellent protection surpassing those of some modern MBTs.

Basic specifications	
Combat weight, t	47
Crew	5
Power-to-weight ratio, hp/t	21.3
Maximum road speed, km/h	65
Fuel endurance, km	550
Armament:	
cannon	2 x 30mm 2A42
ammunition, rds	900
machine gun	1 x 7.62mm PKTM
ammunition, rds	2,000
automatic grenade launchers	2 x 30mm AG-17D
ammunition, rds	600
guided weapons	4 Ataka-T ATGM launchers
Gunner's main sight	combined optical/thermal channel, ATGM laser guidance and laser range finder
Commander's sight	panoramic with TV channel and laser range finder
Sights of grenade launchers operators	Agat-MR combined day/night
Navigation equipment	GPS
Engine type and power, hp (kW)	V-92S2 multifuel diesel, 1,000 (736)

Armament

The armament suite comprises twin 30mm 2A42 automatic cannons, the 7.62mm PKTM coaxial machine gun, two remotely controlled independent 30mm AG-17D automatic grenade launchers and four launchers of the Ataka-T ATGM. The missiles are armed with various types of warheads, such as tandem HEAT warhead for defeating 800 mm of ERA-augmented armour, thermobaric and fragmentation warheads. Such a wide range of missile warheads allows the vehicle to hit any existing and future MBTs, hardened emplacements, low-flying helicopters, etc.

The automated fire control system equipped with the thermal imaging sight provides unique fire and reconnaissance capabilities.

The vehicle's powerful weaponry, advanced protection and mobility ensure all-weather round-the-clock operation on any terrain, including woodland and built-up areas.

BMP-3

Infantry Fighting Vehicle

Mission

The BMP-3 IFV differs from all other combat vehicles: it can both bring personnel to the battlefield and fight on a par with hostile armoured vehicles and tanks and even beat them, thanks to enhanced armament, protection and mobility.

General description

Among infantry fighting vehicles, only the BMP-3 boasts such a formidable weapons system: 100mm main armament/ATGM launcher, 30mm 2A72 automatic cannon, and three 7.62mm PKT machine guns. The weapons suite is managed by an automated fire control system and a two-plane stabiliser ensuring effective firing against tanks, armoured personnel carriers, infantry fighting vehicles, low-flying aircraft and enemy personnel at a range of up to 5,000 m. The vehicle can also deliver indirect fire at a range of up to 7,000 m. At customer request the fire control system can be fitted with a thermal imaging sight.

The 500hp four-stroke ten-cylinder water-cooled V-engine develops 70km/h speed cross-country, thus making the BMP-3 a very manoeuvrable and hard-to-hit target. In addition, the vehicle can cross water obstacles at a speed of 10 km/h at Sea State 3. At Sea State 1, the vehicle can fire its main armament while afloat.

The BMP-3 passed its trials in the Arabian Peninsula deserts and the Gulf waters with success, earning well-deserved respect.

Basic specifications	
Combat weight, t	18,7
Crew+troops	3+7
Specific ground pressure, kg/sq. cm	0.61
Max road/afloat speed, km/h	70/10
Fuel endurance, km	600
Power-to-weight ratio, hp/t	26.7
Engine:	
type	UTD-29
power, hp	500
Obstacles negotiated:	
gradient, deg	max 35
vertical wall, m	0.80
trench, m	2.5
seaworthiness, Sea State	up to 3
Armament:	
2A70 main gun/ATGM launcher:	
calibre, mm	100
ammunition, rds	40 (22 in autoloader)
2A72 automatic cannon:	
calibre, mm	30
ammunition, rds	500 in two belts
PKT machine gun:	
number	3
ammunition per machine gun, rds	2,000 in one belt
Guided weapon system:	9K117 Bastion
ammunition, msl	8
Stabiliser	2E52, two-planes
Fire control system	automated, with a ballistic computer

BMP-1

Infantry Fighting Vehicle Upgrade

Purpose

The BMP-1 upgrade programme complies with up-to-date requirements to combat effectiveness, including firepower, armour protection, mobility and operational reliability.

Modernisation programme

Several modernisation options are proposed.

The elementary upgrade programme includes:

- introduction of the AG-17 automatic grenade-launcher into the weapons suite;
- replacement of the Malyutka ATGW with the Konkurs ATGW;
- installation of the tracks and the driving wheels of the BMP-2.

Another two modernisation variants bring the BMP-1 to BMP-2's level in terms of specifications. They encompass:

- installation of the BMP-2 IFV's two-seat combat compartment, or the single seat compartment of the BMD-2 vehicle;
- chassis upgrading to increase the vehicle's carrying capacity, as well as run smoothness and cross-country capabilities;
- introduction of water displacing wings of the BMP-2.

Modernisation of the BMP-1 may include:

- enhancement of the crew and troops armour protection from personnel and antitank mines;
- improvement of fire-fighting capability;
- increase of the ballistic protection of the vehicle's sides and rear;
- ensuring comfortable habitability of the crew and troops at temperatures of up to +50°C;
- increase in the target detection range at night by more than three times through installation of the improved active/passive gunner's sight;
- improvement of the vehicle's mobility and fuel consumption characteristics owing to the new 360hp UTD-23 turbocharged engine, upgraded by 20 per cent as compared to BMP-1's engine.

Basic specifications

	BMP-1	BMP-1 upgrades		
		with AG-17 grenade launcher	with BMP-2 combat compartment	with BMD-2 combat compartment
Combat weight, t	13.4+2%	13.6+2%	14.25+2%	13.8+2%
Crew + troops	3/8	3/8	3/7	3/7
Main armament, type	73mm gun, Malyutka ATGW	73mm gun, 30mm AG-17 automatic grenade launcher, Konkurs ATGW	30mm 2A42 automatic gun, Konkurs ATGW	30mm 2A42 automatic gun, Konkurs ATGW
Ammunition, rds	40 3 ATGM	40 (gun) 427 (AG-17) 3 ATGM	500 3 ATGM	300 3 ATGM
Elevation of the main armament, deg	–4...+30	–4...+30 (Gun) –4...+70 (AG-17)	–5...+75	–5...+75
Armament stabiliser, type	none	none	two-plane electromechanical	two-plane electromechanical

BMP-2

Infantry Fighting Vehicle Upgrade

Purpose

The BMP-2 IFV has lived up to its reputation in various armed conflicts due to its high combat efficiency, simple design, and reliability.

A modernisation programme for the BMP 2 IFV is offered in accordance with contemporary requirements to combat efficiency. The programme is aimed at improving main specifications of the combat vehicle: fire power, protection, mobility, and operational efficiency by making full use of long-term expertise in developing and manufacturing IFVs and their derivatives, as well as their combat employment.

Modernisation programme

The modernisation programme envisages introduction of the following systems:

- BPK-3-42 gunner's sight with a laser illuminator, or the gunner's sighting-observation system with thermal imaging unit and the TKN-AI commander's vision device with laser active pulse illuminator, which considerably increases target detection range especially at night and in poor visibility conditions;
- AG-17 automatic grenade launcher;
- upgraded fire control system;
- additional armour protection, add-on skirt, and anti-mine belly panels;
- Iney automatic fire-fighting system;
- UTD-23 multi-fuel turbo-charged engine;
- TVK-1 versatile driver's device;
- fitting the KBM-2 air-conditioning sytem.

The IFV modernisation can be carried out either at the manufacturing plant or customer's repair facilities with the assistance of the manufacturer's skilled experts.

The upgraded vehicles are provided with corresponding warranty and service maintenance, performed by the manufacturing plant for mass production vehicles.

Basic specifications	
Combat weight, t	14.46+2%
Crew + troops	3 + 7
Maximum speed, km/h	65
Cruising range, km	550-600
Power plant type	multi-fuel turbo-charged diesel
designation	UTD-23
power, hp	360
Armament:	
main	30mm 2A42 cannon
auxiliary	30mm AG-17 automatic grenade launcher 7.62mm PKT machine gun
missiles	Konkurs-M
Ammunition allowance, rds:	
2A42 cannon	500 in two belts
AG-17 automatic grenade launcher	250 in one belt
PKT machine gun	2,000 in one belt
Konkurs-M missiles	4
Armament stabiliser	2E36-5 in two planes
Armour protection	bullet-proof

BMP-3

Infantry Fighting Vehicle Upgrade

Purpose

The Russian defence industry has developed a comprehensive BMP-3 IFV modernisation programme to enhance its fire power, armour protection, mobility and reliability.

Modernisation programme

Principal components to be mounted on the vehicle as part of the modernisation programme are as follows:

- Vesna-K sighting system comprising a thermal imaging camera and an automatic target tracking device;
- SOZh gunner's sighting system featuring improved optical characteristics, sighting line independently stabilised in two planes, an ATGM laser guidance channel and an integrated laser range-finder;
- electromechanical ATGM loading system;
- new rounds with improved target destruction capability;
- additional armour protection screens;
- Arena-E active protection kit;
- UTD-32 engine;
- TVK-1 driver's multifunction device;
- IUSSh-688 chassis data control system;
- KBM-3M conditioning system.

Besides the foregoing variant of BMP-3 modernisation, there have been developed some programmes of its partial modernization involving installation of Shtora-1 electro-optical countermeasures system, the gunner's and driver's personal digital aid, and a self-contained air conditioner/power source.

The modernisation programme can be carried out either at the manufacturing plant or customer's repair facilities with participation of experts dispatched by the producer.

Upgraded assets are provided with guarantee and maintenance services rendered by experts of the manufacturing plant for mass-produced vehicles.

Basic specifications	
Combat weight, t	21
Crew + troops	3+7
Maximum speed, km/h	70
Cruising range, km	600
Engine:	
type	UTD-32 multifuel turbocharged diesel
power, hp	660
Armament:	
cannon	30mm 2A72 two-belt automatic cannon
gun/launcher	100mm 2A70 semi-automatic rifled gun
machine gun	3 x 7.62mm PKT machine guns
guided weapons suite	9K117 Bastion
Ammunition:	
30mm	500 in two belts
100mm	40, with 22 in autoloader
7.62mm for each PKT	2,000 in one belt
ATGM	8
Fire control system	automatic with ballistic computer
Protection	all-around, against AT rockets and ATGMs

BRM-3K RYS

Combat Reconnaissance Vehicle

Mission

The BRM-3K combat reconnaissance vehicle is based on the BMP-3 IFV and features similar mobility and protection. It is capable of operating within tank and infantry formations, negotiating ditches, trenches and water obstacles in stride, autonomously constructing fortifications both for itself and similar vehicles, as well as operating independently as deep as 100 km in the enemy rear.

General description

The vehicle is armed with the 2D stabilised 30mm 2A72 cannon (ammunition allowance - 400 rounds) and the 7.62mm PKT coaxial machine gun (2,000 rounds). In order to engage tanks the vehicle carries four ATGW missiles. The main armament sighting system consists of the BPK-2-42 combined sight with a night passive/active channel and the PPB-2 anti-aircraft sight.

The special reconnaissance equipment package enables the vehicle to search for, detect, and designate targets by day and night in poor optical visibility conditions, process and transmit intelligence data to command posts at a range of 100 km (or to 350 km when necessary). The combat compartment mounts: the 1PN71 TV search device; the 1PN61 pulse illumination source search device; the 1D14 laser range finder; and the 1RL133-1 radar. The vehicle can be fitted with additional reconnaissance equipment allowing observation post to be set up at a range of 0.5 to 6 km from the base vehicle, as well as hostile radar detection equipment. The 1V520 computer provides fire control and adjustment.

The vehicle is fitted with navigation equipment, which displays both digital data, and the vehicle's position on an electronic topographical map. The BRM-3K CRV mounts an NBC protection system. Electric devices are powered by the main generator or the integrated autonomous electric power system with an output power of 4 kW.

Basic specifications	
Combat weight, t	19
Crew	6
Average specific ground pressure, kg/sq. cm	0.6
Max road/afloat speed, km/h	70/10
Road cruising range, km	600
Engine power, hp	500
Armament:	
cannon, calibre, mm	2A72 automatic cannon, 30
machine gun, calibre, mm	PKT, 7.62
Cannon effective range of fire, m	
high-explosive/incendiary round	4,000
armour-piercing tracer round	2,500
Max target detection/designation range, m:	
radar	12,000
range-finder	up to 10,000
thermal imaging device	3,000
Max radio communications range, km:	
VHF/UHF	40
HF	350
Data transfer equipment	available
Digital data/voice scramblers	available

BMD-3

Airborne Combat Vehicle

Mission

The BMD-3 ACV is a highly manoeuvrable, tracked, light armoured amphibious vehicle with excellent navigability. It boasts powerful armament, capable of efficiently engaging modern armour and manpower. The vehicle can be airdropped with the crew inside on special versatile seats.

Basic specifications	
Combat weight, t	12.5 + 3.2%
Crew + troops	2 + 5
Engine type and power, kW (hp)	diesel, 331 (450)
Power-to-weight ratio, kW/t (hp/t)	26.45 (36)
Armament:	
cannon type and calibre, mm	automatic, 30
missiles	9K113 or 9K113M
auxiliary weapons	30mm AG-17 automatic grenade launcher 7.62 mm PKT coaxial machine gun
Ammunition allowance (additional), rds:	
30mm HE and APT	500
9M113 or 9M113M ATGM	4(2)
30mm VOG-17M	290
7.62mm PKT	2,000
Speed, km/h:	
maximum road/afloat	70/10
cross country road	45-50

Armament

The vehicle's armament comprises the 30mm 2A42 cannon, the 9K113 Konkurs or the 9K113M Konkurs-M ATGM system, the 30mm AG-17 automatic grenade launcher, and the 7.62mm PKTM coaxial machine gun. The BMD-3's hull has four portholes for firing troops' weapons: one for a light machine gun and three for assault rifles. The cannon and the coaxial machine gun are stabilised in two planes.

The vehicle's design allows it to be used as a standard chassis for a family of various-purpose combat tracked amphibious airdropped vehicles weighing from 12 to 18 tonnes.

BTR-90

Armoured Personnel Carrier

Mission

The BTR-90 armoured personnel carrier is designed to transport personnel with organic arms and provide fire support on the battlefield.

As compared to its predecessors the BTR 90 features considerably improved fire power, protection, and mobility.

Armament

The vehicle's armament, mounted on the revolving turret, comprises the 30mm 2A42 cannon, the 7.62mm PKTM coaxial machine gun, the 9K113M Konkurs-M ATGM, and the 30mm AG-17 automatic grenade launcher. The cannon, the coaxial machine gun, and the automatic grenade launcher are stabilised in two-planes. The ATGM system can be fired both from the vehicle and a remote launcher, which increases the APC's combat capabilities and survivability when in defence due to dispersed fire of the organic weapon systems and masking of the real firing position of the vehicle proper.

Features

The APC's closed hull boasts increased anti-explosion capability due to V-shaped bottom providing a higher level of protection against mines. In addition to that, front armour plates are capable of sustaining small-calibre armour-piercing projectiles. When required, the APC can be fitted with additional armour protection. The BTR-90 is fitted with the automatic fire-fighting, the NBC protection, and the integrated chassis control systems.

The vehicle's superb mobility is provided by the powerful multi-fuel diesel engine, hydro-mechanical transmission with hydrovolumetric gear, and independent torsion bar suspension with great dynamic travels and increased-power intensity hydraulic shock absorbers.

At customer request the vehicle can be fitted with an air conditioning system and a thermal imaging sight.

Basic specifications	
Combat weight, t	20.92
Crew (+ troops)	3 (+ 7)
Engine type/power, kW (hp)	diesel/368 (510)
Power-to-weight ratio, hp/t	24.4
Armament:	
cannon type and calibre, mm	2A42 automatic cannon, 30
missiles	Konkurs-M
auxiliary weapons	30mm AG-17 automatic grenade launcher
	7.62mm PKTM coaxial machine gun
Ammunition allowance, rds:	
30mm HEI, FT and APT	500
9M113 or 9M113M missiles	4
30mm VOG-17M	400
7.62mm PKTM	2,000
Speed, km/h:	
maximum road/afloat	100/9
dry unpaved road	more then 50
Fuel endurance, km	800

BTR-80

Armoured Personnel Carrier

Mission

The BTR-80 APC is designed to transport military personnel under light armour protection, and provide fire support.

The BTR-80 APC is provided with ten seats to accomodate the squad (vehicle) commander, driver, gunner and seven troops.

It features a powerful diesel engine, which has considerably increased the APC's mobility.

Basic specifications	
Combat weight, t	13.6
Wheel arrangement	8 x 8
Crew + troops	3 + 7
Engine type and power, hp	diesel, 260
Power-to-weight ratio, hp/t	19.12
Armament:	
main	14.5mm KPVT machine gun
auxiliary	7.62mm PKT coaxial machine gun
Ammunition, rds:	
14.5 mm	500
7.62 mm PKT machine gun	2,000
Laying angles, deg:	
elevation	-4 to +60
azimuth	360
Speed, km/h:	
max road	80
afloat	9
Fuel endurance, km	600
Armour protection	bullet-proof

The BTR-80 also boasts better protection than its predecessors.

General description

Given combat experience of the APC in alpine terrain, the mounted troops' small arms field of fire has been considerably increased. The vehicle has also been fitted with a turret machine gun with an elevation of 60 degrees, and a new 1PZ-2 optical sight, which enables the vehicle to fire at air targets. The APC also mounts six barrel smoke dischargers on the rear side of the turret in order to set smoke screens.

The BTR-80 is equipped with bullet-proof tyres, which allow the APC to keep on moving even after they have been penetrated by bullets or fragments. The vehicle is capable of moving even when it hits an anti-tank mine and two of its wheels on one side are rendered ineffective.

Dismounting of personnel, even on the move, has been made easier due to fitting the APC with larger clamshell side doors (lower panels are used as ramps).

The BTR-80's reliable design became the basis for developing a whole range of various-purpose wheeled armoured vehicles.

BTR-80A

Armoured Personnel Carrier

Mission

The BTR-80A armoured personnel carrier is a BTR-80 derivative designed to carry infantrymen to the battlefield and provide them with fire support as well as to conduct reconnaissance and patrol in any terrain and weather.

Features

The vehicle features top-notch combat and technical characteristics proven in various tests and in combat. Based on the experience of the recent local wars which underlined the need of enhancing the BTR-80's firepower to step up security of troops and convoys escorted, a decision was taken to fit the vehicle with a new turret housing an externally-mounted 30mm automatic cannon and a coaxial 7.62mm machine gun. The gunner's sight ensures accurate fire delivery against low-flying air targets. Introduction of the TPN3-42 tank passive/active night sight and the OU-5M floodlight have stepped up the vehicle's night fire capability. The gun and coaxial machine gun's high elevation angles enable the firer to effectively engage targets on top storeys of buildings when fighting in urban areas, as well as those occupying higher positions in mountains.

The vehicle's protection and agility match those of the BTR-80.

Basic specifications	
Combat weight, t	14.55
Wheel arrangement	8 x 8
Crew+troops	2+8
Engine type and power, hp	diesel, 260
Power-to-weight ratio, hp/t	17.87
Armament:	
main	30mm 2A72 automatic cannon
auxiliary	7.62mm PKT coaxial machine gun
Ammunition, rds:	
30mm	300 in two belts
7.62mm	2,000 in one belt
Elevation, deg	-5...+70
Traverse, deg	360
Speed, km/h:	
max road	80
afloat	9
Fuel endurance on highway, km	600-800
Protection	bullet-proof

BTR-T

Heavy Armoured Personnel Carrier

Concept

Recent combat operations offer a graphic example of how important protection of infantry against contemporary weapon systems is. Existing light armoured wheeled and tracked vehicles in service with many countries are not always capable of providing enough protection.

To increase protection, Russian armour designers have developed the BTR-T heavy APC, based on the T-55 MBT, with armour protection comparable to that of an MBT.

Equipped with ERA and a contemporary NBC protection system, the armoured hull provides reliable protection of the crew, comprising the commander, the driver, and five troops.

Features

The main feature of the BTR-T is the tank chassis mounting a low-profile turret with a platform, armed with contemporary gun and missile systems, including the 30mm 2A42 cannon and the Konkurs ATGM launcher. This armament enables the vehicle to efficiently engage enemy personnel, as well as armoured ground and low-flying air targets. The combat compartment houses five comfortable seats for troops. Troops exit through two hatches on the roof, with armoured covers opening upwards to protect them during exit or when mounted.

The BTR-T is capable of reaching a speed of 50 km/h and transporting infantry personnel in eventual NBC environment or in close fire contact with the enemy, as well as efficiently destroying targets on the battlefield.

The modular design of the combat compartment allows the vehicle to be fitted with various armament packages at the customer's request:

(1) 30mm 2A42 cannon and two Konkurs ATGM launchers;
(2) 30mm 2A42 cannon with 30mm AG-17 automatic grenade launcher;
(3) Two twin 30mm 2A38 cannons;
(4) 12.7mm NSVT machine gun and two Konkurs ATGM launchers;
(5) 12.7mm NSVT machine gun, and 30mm AG-17 grenade launcherþ

Basic specifications	
Combat weight, t	38.5
Crew + troops	2+5
Maximum speed, km/h	50
Cruising range, km	500
Engine:	
designation	B-46-6
power, hp	780
Armament:	
main	30mm 2A42 cannon
auxiliary	7.62mm PKT coaxial machine gun
missiles	Konkurs-M ATGM
Ammunition allowance, rds:	
30 mm 2A42 cannon	200
PKT coaxial machine gun	2,000
missiles	3
Armour protection	against AT rockets and missiles

MT-LB and MT-LBM

Multi-Purpose Tracked Technical Support Vehicles

Mission

The MT-LB and the MT-LBM multi-purpose tracked technical support vehicles are designed to transport personnel, tow systems and trailers with a total weight of 6.5 t, and counter light armoured ground and air targets.

Features

The vehicles feature high mobility and cross-country capability in various terrain, including swamps, loose snow and sand. When the vehicle is fitted with special snow/swamp tracks, its specific ground pressure is less than 0.28 kg/sq.cm, i.e. less than that of a human. With a nominal load of up to two tonnes the vehicle is capable of negotiating water obstacles at a speed of 5-6 km/h. Due to its high mobility, the MT-LB is popular with armed forces of various states, including NATO countries. Relatively small weight and dimensions allow the vehicle to be airlifted by utility helicopters.

The MT-LB chassis are employed in self-propelled air defence and anti-tank systems, command vehicles, self-propelled artillery systems, and airlifted earthmoving vehicles.

In order to improve the vehicle's fire power, the MT-LBM 6MA and the MT-LBM 6MB modifications have been developed recently. They are armed with the 14.5mm KPVT machine gun and the 30mm 2A72 cannon respectively.

Basic specifications

	MT-LB	MT-LBM 6MA	MT-LBM 6MB
Combat weight, t	10.1	10.5	11.75
Lifting capacity, t	2 - 2.5	2 - 2.5	1
Crew + troops	2+11	2+8	2+8
Towed trailer max weight, t	6.5	6.5	6.5
Specific ground pressure, MPa	0.045	0.045	0.046
Engine type and power, hp	diesel, 240	diesel, 240	diesel, 240
Power-to-weight ratio, hp/t	24.74	22.85	20.42
Armament:			
main	7.62mm PKT machine gun	14.5mm KPVT machine gun	30mm 2A72 cannon
auxiliary	-	7.62mm PKT coaxial machine gun	7.62mm PKT coaxial machine gun
Ammunition allowance, rds:			
30mm	-	-	300 in two belts
14.5mm	-	500	-
7.62mm PKT	2,500	2,000 in one belt	2,000 in one belt
Speed, km/h:			
max road speed	60	60	60
afloat	5-6	5-6	5-6
Fuel endurance, km	500	500	500
Armour protection, mm	bullet-proof	bullet-proof	bullet-proof

BTR-50PK

Armoured Personnel Carrier Upgrade

Purpose

The BTR-50PK APC is a lightweight amphibious tracked armoured combat vehicle fitted with a troop compartment. It can carry up to 20 fully outfitted troops or 2,000kg military hardware. Developed some 50 years ago, the APC is still in service with many armed forces across the globe.

Modernisation programme

A programme for the BTR-50PK transmission/engine upgrading was developed in 2000.

Modernisation is centred around the uprated to 300 hp V6-BF engine, similar in design to the BTR-50PK's standard engine. The APC's maximum speed is increased to 60 km/h by installing a set of upgraded components:

- increased-power engine;
- ejector with greater oil and water radiators;
- reinforced main clutch to transmit greater engine torque;
- synchronizer-equipped gearbox.

The improved engine and transmission components provide:

- their accomodation into organic mounting seats in the hull;
- retention of the same vehicle control techniques, thus eliminating necessity to retrain personnel;
- retention of practically the same weight of the chassis;
- retrofitting of the APC at any workshop equipped with one-tonne hoist.

Basic specifications	
Engine:	
type	V6-BF/UTD-23 diesel
power, hp	300/360
Speed, km/h:	
max road	60
cross-country	45
afloat	12
Cruise range, km	450

1137 E

Control and Test Vehicle

Mission

The 1137 E control and test vehicle is designed for:

- scheduled maintenance and repairs of guns, sights, stabilisers, fire control systems of the T-72, T-80, and T-90 tanks in compliance with the TO-1 and TO-2 procedures, determined by the operating manuals, using special tools and equipment for instrumental control and adjustment;
- technical preparation of weapons for firing, including sight adjustment, and zeroing-in of the gun both by firing and without it;
- ballistic preparation for firing, including correction of the muzzle velocity by using data on the batch of ammunition and muzzle wear;
- training personnel to organise maintenance procedures for tank armament, as well as carry out technical and ballistic preparation of guns and maintenance of the vehicle;
- clearing the muzzle from scale, lubricants, dirt and rust, when preparing the gun for firing and testing;
- electronic documentation of works and printing of papers.

General equipment

The vehicle has a set of power supply, communications and life support systems, which ensure safe and comfortable operation of the crew in adverse operating conditions.

The set includes:

- on-board information and control system, consisting of the Baget computer, muzzle velocity measuring system, and special software;
- muzzle angle measuring and sight adjustment device;
- mechanism for cleaning the barrel;
- set of tools and accessores for adjusting the armament of tanks for normal operation, as well as for maintenance and repairs of the fire control system;
- inspection equipment for testing special equipment and the systems of the vehicle itself;
- power supply unit, power supply safety means, heating and air conditioning systems, radiation level measuring device, decontamination device for the vehicle and its systems to be decontaminated after they have passed through the contaminated area, as well as other equipment.

Basic specifications	
Chassis	KamAZ-43101
Van	K4310
Max weight, kg	12,020
Crew	3
Dimensions, mm:	
length	8,240
width	2,250
height	3,317
Into-action time, min:	
in summer	60
in winter	90
Out-of-action time, min	30
Operation mode	8-hour cycles with 1 hour break
Current source	external power plant or a self-sustained source
External power plant AC voltage, V	380
Power consumption from external power plant, kW	not more than 8
Operating conditions:	
temperature, °C	-50...+50
humidity at +30°C, %	up to 100
atmospheric pressure, mm Hg	450-780

T-72, T-80U, and T-90S MBT

Integrated Simulators

The integrated tank simulators are designed to train and master MBT crews' skills in coordinated discharge of their tasks in various weather conditions, by day and night in any season, firing the tank's main armament and the coaxial machine gun in all modes of the fire control system.

The T-72 MBT crews use the KT-172 simulator, the T-80U crews - the KT-219 simulator, and the T-90S crews - the KT-188 simulator.

The simulators comprise:
- instructor unit;
- combat compartment unit;
- driver unit.

The simulators can be quartered in a classroom or a standard 20-feet container, equipped with an air conditioning system and an autonomous electric power source.

BMP-2 and BMP-3 IFV

Integrated Simulators

The integrated infantry fighting vehicle simulators are designed to train and perfect IFV crews' skills in coordinated discharge of their tasks in various weather conditions, by day and night in any season, firing the vehicle's automatic cannon, coaxial machine gun and ATGW missiles in all modes of the fire control system.

The BMP-2 IFV crews use the KT-675 simulator, the BMP-3 crews - the KT-688 simulator.

The simulators comprise:
- instructor's unit;
- combat compartment unit;
- driver's unit.

The simulators can be placed in a classroom or a standard 20-feet container, equipped with an air conditioning system and an autonomous electric power source.

KDKhR-1N

Chemical Agent Reconnaissance Vehicle

Mission

The KDKhR-1N chemical agent reconnaissance vehicle is designed for the remote detection of nerve agent contamination in the atmosphere substratum.

The KDKhR-1N can detect and determine linear dimensions and coordinates of an agent cloud. It generates alarm signals and transmits them into the warning system. The vehicle also carries out radiation and chemical reconnaissance.

Equipment

The vehicle is fitted with:

- laser detection system;
- chemical and nuclear reconnaissance sensors suite, which includes:
- IMD-21B dose rate meter;
- GSA-12 automatic chemical agent detector;
- PGO-11 semi-automatic chemical agent detector;
- KPO-1 probe unit.

The system is mounted on the MT-LB amphibious armoured tracked chassis, which features high mobility even on rugged terrain. Navigation and communications units, designed to timely acquire transmit reconnaissance data, comprise the TNA-4-6 navigation equipment, and data transmission equipment.

In contaminated areas the crew is protected by the collective NBC protection system and individual protection means.

Basic specifications	
Near-ground atmosphere area, covered in one scanning cycle, sq. km	up to 75
Time:	
scanning cycle, sec	60
automatic surveillance mode operation, hrs	130
required for transmitting chemical agent cloud coordinates in the topographical coordinate system from the moment the cloud is detected, sec	10
non-stop operation after a 500km march without refuelling, hrs	3
Azimuth scanning angles, deg	0-360
Scanning speed, deg/s	6
Elevation operational angles, deg	-3...+70
Range and depth detection error, m	±30
Crew	3

RKhM-4-01

NBC Reconnaissance Vehicle

Basic specifications	
Weight, kg	13,500
Reconnaissance mission speed, km/h:	
radiation	up to 30
chemical	up to 10
Special-to-role equipment	
- IMD-21B (IMD-1r) dose rate metre	
- GSA-13 automatic chemical agent detector	
- PGO-11 semi-automatic chemical agent detector	
- KPO-1 sampler	
- DP-5V dose rate metre	
- VPKhR chemical agent detector kit	
- MK-3M meteorological kit	
- KZO-2 marker flag emplacement unit	
- chemical alarm signals launcher with control panel	
- TNA-4-4 tank navigation equipment	
Crew	3

The RKhM-4-01 vehicle is designed to carry out NBC reconnaissance in adverse topographical and weather conditions, when negotiating natural and man-made obstacles and water bodies by day and night in any season.

The vehicle is based on the BTR-80 APC chassis.

BMM GAZ-59039

Armoured Medical Vehicle

The BMM GAZ-59039 armoured medical vehicle is designed to search for, collect, and evacuate the wounded from the battlefield, NBC contaminated areas, to provide emergency medical assistance during transportation in various climate and weather conditions, as well as to be used as a mobile dressing ward manned by a team of doctors. The BMM vehicle, based on the BTR-80 APC, is capable of operating on rugged terrain by day and night in any season.

The vehicle's equipment includes a 5.6 x 3.5 x 2 m tent deployed separately or in combination with the BMM to form a medical operational unit. In the latter case the tent is attached to one of the vehicle's side doors by a vestibule.

The BMM's special equipment comprises:

- racks for mounting four stretchers;
- racks and containers for housing medical equipment;
- 40-litre fresh water tank;
- sink with an elbow-operated tap;
- six-person seat with seat belts.

Basic specifications	
Weight, kg	14,550
Crew	3
Power plant output, hp	260
Max evacuation capacity, persons	9
Max speed, km/h:	
road	80
afloat	9
Fuel endurance, km	600
Armour protection	bullet-proof

BREM-1

Armoured Repair
and Recovery Vehicle

Mission

The BREM-1 armoured repair and recovery vehicle is designed for battlefield recovery of damaged tanks and other armoured vehicles to centralized location or shelter, tugging out stuck tanks and other military vehicles, and assisting crews in field repair and servicing of armoured vehicles.

Equipment

The BREM-1 carries the following special equipment:

- pull winch, rigging arrangement, and anchorage for tugging of stuck armoured vehicles;
- tow lines and gear for disabled vehicles recovery;
- lifting crane, welding equipment and on-vehicle tool kit for tank repair and servicing;
- cargo platform for transportation of spare parts and materials necessary for repair;
- bulldozer blade for excavation and rubble clearing operations.

The BREM-1 vehicle is based on the T-72 tank chassis. It is armed with a 12.7mm machine gun. The vehicle is fitted with an NBC protection system, an automatic fire-fighting system. The BREM-1 is equipped for fording water obstacles along the bottom.

Basic specifications	
Weight, t	41
Crew	3
Engine	V-84MS diesel
Engine output, hp	840
Maximum speed on highway, km/h	60
Cruising range on highway with extra fuel tanks, km	700
Special equipment:	
lifting crane:	
lifting capacity, t	12
pull winch:	
thrust, t	up to 25
auxiliary winch:	
thrust, kg	up to 580
electric welding equipment	available

BREM-80U

Armoured Repair
and Recovery Vehicle

Mission

The BREM-80U armoured repair and recovery vehicle is based on the T-80U tank chassis. The vehicle is designed for recovery of damaged and disabled armoured vehicles and field repair and servicing of T-80U tanks.

Equipment

The BREM-80U carries the following special equipment:

- pull winch, rigging arrangement and anchorage for tugging of stuck armoured vehicles;
- tow lines and gear for disabled vehicles recovery;
- lifting crane, welding equipment and on-vehicle tool kit for T-80U tank repair and servicing;
- cargo platform for transportation of spare parts and materials necessary for repair;
- bulldozer blade for excavation and rubble clearing operations.

Basic specifications	
Combat weight, t	46
Crew	4+1
Engine type and output, hp	gas turbine, 1,250
Max speed, km/h	70
Fuel endurance, km	500
Armament	12.7mm KORD machine gun
Special equipment:	
Main winch:	
- thrust, t	35
- thrust with four snatch blocks, t	140
Auxiliary winch:	
- thrust, t	30
Crane:	
- lifting capacity, t	18
- lifting capacity with one snatch block, t	30
Welding equipment	available

BREM-L

Armoured Repair and Recovery Vehicle

Mission

The BREM-L armoured repair and recovery vehicle is designed to recover lightweight damaged vehicles under enemy fire, and provide assistance to crews in repairs and maintenance in field conditions.

Capabilities

The BREM-L is capable of:

- recovering stuck vehicles;
- towing controlled and uncontrolled vehicles in various terrain and afloat;
- carrying out repair works (welding, cutting, lifting) when preparing vehicles for recovery or replacing units and assemblies;
- replacing its own power plant;
- transporting cargo on the jib crane within the repair depot;
- carrying out earthmoving operations when constructing repair bases and fortifications, and preparing vehicles for recovery;
- transporting IFV spare parts and power units.

Basic specifications	
Vehicle weight, kg	18,700
Crew	3+2 (reserve)
Engine:	
type	multifuel diesel
power, hp	450
Max speed, km/h:	
road	71.5
afloat	9
Fuel endurance, km	600
Armament	7.62mm machine gun
Main winch pull capacity, tf	14-16
Crane lifting capacity, tf	5 (11 with pulley blocks)
Welding equipment	for welding and cutting steel and aluminium alloys

BREM-K

Armoured Repair and Recovery Vehicle

Mission

The BREM-K armoured repair and recovery vehicle is a wheeled amphibious vehicle designed to provide logistic support for the units equipped with the BTR-80 type wheeled armoured personnel carriers.

Basic specifications	
Vehicle weight, kg	14,500
Crew	4
Engine power, hp	260
Max speed, km/h:	
road	80
afloat	9
Fuel endurance, km	600
Armament	7.62 mm machine gun
Special equipment:	
Non-pivoting crane	
loading capacity, kgf	1,500
lifting device	winch
Pivoting crane	
loading capacity, kgf	800
lifting device	hand-operated winch
Winch	
pull capacity, kgf :	
without pulley-block	4,400 – 6,000
with pulley-block	15,000
Welding equipment	available

Features

The vehicle supports repair works using the cargo lifting crane and electric welding system. It can facilitate recovery of moderately stuck vehicles, and towing of wrecked vehicles both on the ground and afloat. Also, it ensures a round-the-clock technical monitoring capability and helps crews to carry out maintenance and repair.

The BREM-K is based on the BTR-80 chassis. The vehicle is fitted with the turret-mounted 7.62mm PKT machine gun, NBC protection system, and automatic fire-fighting equipment.

The vehicle uses a winch for self-recovery and recovery of stuck and sunken vehicles. The vehicle possesses an improved stability with lowered hydraulically operated earth spades.

A set of tools and accessories incorporates a rigid coupler for towing uncontrolled vehicles.

Spare parts are transported on a special platform attached to the roof of the vehicle.

125mm 3VBK16 Round

with 3BK18M HEAT Projectile

The 3VBK16 round is designed for 125mm tank guns to deliver direct fire against hostile tanks, self-propelled guns and other armoured targets featuring improved armour protection. The shaped charge ensures effective armour penetration and lethal spalling effect regardless of fire range. Targets protected by armour or hidden behind obstacles, fragments of armour or obstacle are defeated by a combined effect of the shaped-charge jet and the shock wave. Effective against wood/soil, brick and concrete fortifications, the projectile also has a fragmentation anti-personnel effect.

The round is a separate loading munition with a semi-combustible propellant case. The projectile is stabilised in flight by six pop-up fins. A tracer element with a burning time of 6-7 sec is employed to ensure its in-flight observation and fire adjustment.

125mm 3VBM17 Round

with 3BM42 APFSDS-T Projectile

Designed for 125mm tank guns, the round can be used against up-to-date upgraded MBTs with combined armour protection, self-propelled guns, pillbox embrasure doors, armoured cupolas and other armoured targets. The projectile's flat trajectory and short flight time allow the round to be used against time-critical targets.

Featuring separate loading, the round comprises a projectile with an incremental propellant charge and a semi-combustible propellant case housing the main propellant charge. The projectile's body features a five-fin stabilizer and a sabot which is discarded after the projectile has left the barrel. The tracer element with a burning time of 2-3 sec is used for observing the projectile in flight and adjusting fire.

125mm 3VOF36 Round

with 3OF26 HE Fragmentation Projectile

Fired from the 125mm main armament, the round is effective against field fortifications, lightly-armoured targets, exposed weapons and enemy personnel.

The round is a separate loading munition made up of a projectile and a semi-combustible propellant case with the main propellant charge. The potent HE projectile ensures an anti-personnel fragmentation effect in an area of 520 sq.m. Flight stabilisation is provided by a fin assembly with four folding fins.

Basic specifications

	3VBK16	3VBM17	3VOF36
Round weight, kg	29.0	20.4	33.0
Projectile weight, kg	19.0	7.05	23.0
Muzzle velocity, m/s	905	1,700	850
Propellant weight, kg	1.76	-	3.4
Homogenous armour penetration			
at 60deg. incidence and 2,000m range, mm	250	230	-
Operating temperature range, °C	-40...+50	-40...+50	-40...+50

125mm 3UBK20 Round

with 9M119M Guided Missile

The 3UBK20 round with the 9M119M guided missile is designed for fire from the 125mm cannon against enemy tanks and self-propelled artillery systems with formidable armour protection including ERA, pinpoint ground targets (pillboxes and tanks in tank pits) and slow-speed low-altitude hostile aircraft.

The 3UBK20 separate-loading round consists of the 9M119M guided missile and 9Kh949 propellant booster section.

The 9Kh949 propellant booster section is designed to ensure correct settling of the missile in the bore, impart initial velocity to it, and provide contact of the missile's launch circuits with the tank's equipment feeding commands.

The missile carries a tandem shaped-charge warhead comprising the precursor charge to set off ERA and the main charge to punch through the main armour.

The missile features a jam-proof, semi-automatic modulated laser beam-riding guidance system.

100mm 3UBK10M-3 Round

with 9M117M Guided Missile

The 3UBK10M-3 round with the 9M117M guided missile is intended to be fired from the 100mm 2A70 gun/launcher against enemy tanks, self-propelled artillery systems and other targets featuring formidable armour protection including ERA, pinpoint ground targets (pillboxes and tanks in tank pits) and slow-speed low-altitude hostile aircraft.

The 3UBK10M-3 is a unitary round comprising the 9M117M guided missile and the propellant charge case.

The 9M117M missile has a tandem shaped-charge warhead consisting of the precursor charge to detonate ERA and the main charge to defeat the main armour.

The missile features a jam-proof, semi-automatic modulated laser beam-riding guidance system.

Basic specifications

	3UBK20	3UBK10M-3
Round weight, kg	24.3	22.9
ERA penetration	available	available
Armour penetration, mm	700	600
Effective range, km	0.1-5	0.1-4
Operating temperature range, °C	±50	-40...+50
Round length, mm	...	1239
Range of fire, m	100-5,000	100-4,000

100mm 3UOF17 Round

with 3OF32 HE Projectile

The 3UOF17 round with 3OF32 HE projectile is designed to be fired from the 100mm 2A70 gun/launcher against hostile field fortifications, light armoured targets, and exposed weapons and manpower.

The fixed round comprises a projectile with a fuse and a propellant case with a primer cup.

Basic specifications	
Round weight, kg	18.2
Projectile weight, kg	15.6
Muzzle velocity, m/s	250
HE weight, kg	1.7
Operating temperature range, °C	±50
Max range, m	4,000
Projectile length, mm	610

3D6 and 3D6M

Smoke Grenades

The 3D6/3D6M smoke grenades are employed to remotely camouflage armour by creating smoke screens (in front of tanks, IVFs, etc.) in various combat environments. The 3D6 and 3D6M grenades are launched from the 902 Tucha launchers mounted on armoured vehicles.

Basic specifications	
	3D6/3D6M
Calibre, mm	81
Weight, kg	2.3
Smoke screens deployment time, sec	10-20/10-15
Smoke generation period, sec	60-130/at least 45
Average range of the grenade launched at 45 deg, m	200-350

30mm 3UOF8 Round
with High-Explosive Incendiary Projectile

30mm 3UOR6 Round
with Fragmentation Tracer Projectile

30mm 3UBR6 Round
with Solid Armour-Piercing Tracer Projectile

30mm 3UBR8 Round
with Armour-Piercing Discarding Sabot Projectile

Mission

The 3UOF8, 3UOR6, 3UBR6 and 3UBR8 rounds are fired from the 30mm 2A42 and 2A72 cannons mounted on IFVs, ACVs, APCs and combat helicopters.

These munitions (except the 3UBR8) can also be fired from the 30mm 2A38 cannons of Pantsir and Tunguska AD systems.

Features

Standard rounds for the 30mm automatic cannon feature similar design, the only difference being the projectile type.

Rounds with HE incendiary and fragmentation tracer projectiles are efficient against hostile manpower, unarmored and air targets.

The armour-piercing tracer and armour-piercing submunition kinetic energy projectiles are fired from the 2A42 and 2A72 cannons to engage light armoured and air targets.

Basic specifications

	3UOF8	3UOR6	3UBR6	3UBR8
Muzzle velocity, m/s	960	960	970	1120
Cartridge weight, g	837	830	858	765
Projectile weight, g	389	385	400	304
Explosive charge weight, g	49	11.5	-	-
Armor penetration at 60 º incidence, mm (at range, m)	-	-	20 (700)	25 (1500)

LAND FORCES WEAPONS

MISSILES AND ARTILLERY

ISKANDER-E

Theatre Missile System

Mission

The Iskander-E theatre missile system is designed to destroy enemy weapons, command posts, communications nodes, tactical aircraft parked on airfields, air and missile defence installations and other critical targets in operational depth round the clock and in any season when countered by heavy regular and precision-guided munitions, weapons of mass destruction, as well as anti-missile defence and EW assets.

Composition

- 9P78E self-propelled launchers
- 9T250E transporter-loader vehicles
- command vehicle
- launch data preparation post
- maintenance vehicle
- support vehicle

Features

- high combat capabilities in active countermeasures environment
- missile's failure-safe operation during prelaunch preparation and en route to target
- automatic mission profile generation and input performed by the launcher prior to arriving at firing position
- high manoeuvrability and strategic mobility owing to system's transporability by all means
- automated C2I support for missile units;
- ease of operation and long service life

All Iskander-E's vehicles feature cross-country wheeled chassis making them very mobile. The missile is solid-fuelled, single-staged with continuous guidance along the whole trajectory. It features a non-separable warhead with a self-contained INS coupled with an optical homing head. The warhead can house a cluster-bomb, HE-fragmentation or penetrator charge.

Basic specifications	
Range of fire, km:	
maximum	280
minimum	50
Launch accuracy (circular error probable), m:	
autonomous application	30-70
coupled with optical homing head	5-7
Missile launch weight, kg	3,800
Payload, kg	480
Missiles per launcher	2
Chassis	wheeled, cross-country
Pre-launch preparation time, min:	
from firing position	4
from march	16
Operating temperature range, °C	±50

9K58 SMERCH

Multiple Rocket System

Mission

The Smerch multiple rocket system is an effective suppression means of fire. It features high manoeuvrability and capability to rapidly deliver high-density attacks from prepared positions against both planned and unplanned targets. The system is also designed to counter tactical missile systems, army aviation at staging airstrips, as well as rocket, artillery and mortar battalions and batteries, command posts, and manpower in assembly areas. It can also be used for mine laying and engaging armoured vehicles at bases and on the move.

Features

The 9K58 Smerch MRS consists of the 9A52-2 combat vehicle, the 9T234-2 transporter-loader, the Slepok-M1 automated fire control system, a wide range of various-purpose rockets with maximum ranges of 70 km and 90 km, as well as training means and arsenal equipment.

The system can fire rockets with different warheads, including single ones with detachable HE-fragmentation or termobaric warheads, cluster rounds with fragmentation, shaped-charge/fragmentation self-targeting submunitions, and anti-tank mines. A salvo of the Smerch system with cluster warhead rockets can cover an area of 672,000 sq. m.

Upgraded in 1998-99, the 9A52-2 combat vehicle was fitted with a combat fire control system and an automated laying and fire control system.

The modernisation has ensured:

- automated high-speed data exchange and information protection from unauthorised access, as well as visual display and storage of data;
- autonomous survey, navigation and orientation of the combat vehicle with data visualisation on electronic chart;
- automated fire data and mission task generation;
- automated launch tube cluster laying without the crew's involvement and usage of the organic sight.

In one of its variants, the Smerch system's combat vehicle and transporter-loader are based on the Tatra-816 chassis (9A52-2T and 9T234-2T respectively).

Basic specifications	
Range of fire, km:	
maximum	70/90
minimum	20/25
Rocket launch weight, kg	800
Rocket calibre, mm	300
Number of tubes	12
Chassis	MAZ-543M or Tatra-816
Max speed, km/h	60
Cruising range, km	850
Combat weight, kg	43,700
Combat vehicle crew	3
Salvo time, sec	38
Time, min:	
launcher loading	up to 20
deployment from march	3
displacement and departure	1
Salvo centre deviation, % Xmax	0.3

9K51 GRAD

Multiple Rocket System Upgrade

Mission

The modernised 9K51 Grad MRS is designed to defeat unsheltered and bunkered manpower, soft-skinned materiel and tanks in concentration areas, artillery and mortar batteries, fixed- and rotary-wing aircraft on landing strips, command posts and other targets, as well as to lay antitank mines.

Composition

- BM-21-1 combat vehicle with automated laying and fire control system and launch preparation equipment
- 9T254 transporter-loader with 9F37M unified set of racks
- multi-purpose rocket-assisted projectiles with enhanced range and power

Basic specifications	
Calibre, mm	122
Range of fire, km:	
maximum	up to 40
minimum	5
Full launch time, sec	20
Number of launch tubes	40
Weight, kg:	
basic rocket projectile	66.6
loaded CV	13,700
loaded TL	13,600
Combat crew	3
Loading time, min	7
Number of projectiles in rack, pcs	60

Modernisation programme

- launch range increase to 40 km
- ability to hit soft-skinned targets and tanks
- firing from unsurveyed sites
- laying of the launch tube cluster with the crew staying in the cabin
- autonomous initial orientation, determination of a current position angle and combat vehicle's coordinates on the move or when parked
- visual representation of graphical information on launch tube cluster laying and CV route with indication of its position, point of destination and direction of movement
- reduction of launch preparation period from the moment of receiving target designation data to the time of opening fire in a battery composition
- enhanced survivability due to reduction of CV time at fire position

9M521

Increased-Lethality HE-Fragmentation Rocket-Assisted Projectile

Mission

The 9M521 projectile is designed for highly efficient engagement of all types of unsheltered ground targets (vehicles, structures, manpower, etc.).

Basic specifications	
Calibre, mm	122
Weight, kg:	
projectile	66
warhead	21.0
Range of fire, km	up to 40.0
Operating temperature range, °C	±50

9M218

HEAT-Fragmentation Rocket-Assisted Projectile

Mission

The 9M218 projectile is intended to destroy light armoured vehicles (APCs, IFVs) and personnel.

Basic specifications	
Calibre, mm	122
Weight, kg:	
projectile	70
warhead	25.0
Number of HEAT-fragmentation elements, pcs	45
Range of fire, km	up to 30.0
Homogeneous armor penetration, mm	100...120
Operating temperature range, °C	±50

152mm 2S19M1 /155mm 2S19M1-155 MSTA-S

Modernised Self-Propelled Howitzers

Mission

The 2S19M1 and 2S19M1-155 Msta-S howitzers are up-to-date tracked combat vehicles featuring long-range artillery weapons, armour and NBC protection, increased range, high mobility and sustainability. The howitzers are designed to destroy (suppress) enemy artillery and mortar batteries, tanks, anti-tank vehicles and other armour, exposed and protected manpower and materiel, command posts, air and anti-missile defence assets and electronic means. They are also intended for coping with field fortifications and other defensive installations, as well as for preventing enemy infantry and tank forces from carrying out manoeuvres.

Ammunition employed copes with the above range of tasks, while Krasnopol (Krasnopol-M) guided projectile facilitates engagement of pinpoint targets, such as tanks, at a distance of 20 km.

Features

The Msta-S howitzers are fitted with the automated guidance and fire control system that includes topographic orientation equipment, the 1P22 automated back-up sight, the 1P23 sight for direct fire, and a set of ground satellite navigation receiver equipment. The automated guidance and fire control system provides for counterfire manoeuvre with self-sustained measurement of present coordinates, self-sustained calculation of settings for indirect fire, automatic laying of weapon and automatic adjustment of elevation and azimuth after shot when firing at the maximum rate of fire (blind laying pattern).

The howitzers are provided with automated ammunition loading system, which ensures high rate of fire.

Basic specifications

	2S19M1	2S19M1-155
Weight, t	42	43
Dimensions, m:		
length	11.91	12.42
width	3.38	3.38
height	2.98	2.98
Rate of fire, rds/min	8	6-8
Max range of fire, km:		
HE-fragmentation round	24.7	30
HE-fragmentation round		
with gas generator	29.06	41.0
Krasnopol/Krasnopol-M		
guided projectile	20	17-20
Loading:		
round	automatic	automatic
charge	semi-automatic	manual
Crew	5	5
Max speed, km/h	60	60
Fuel endurance, km	500	500

152mm MSTA-B

Towed Howitzer

Mission

152mm 2A65 Msta-B towed howitzer is designed to engage hostile exposed and sheltered manpower, weapons, tactical nuclear weapons, command and control posts, artillery and mortar batteries, tanks and infantry in strongholds, at deployment lines and on march, AD and EW assets, etc., as well as to demolish field fortifications.

Features

Depending on the mission at hand, howitzer fires regular or HE-fragmentation rocket-assisted ammunition including cluster munitions filled with fragmentation, HEAT-fragmentation, or self-targeting submunitions, illuminating and smoke rounds, active tactical communications jamming rounds and Krasnopol laser beam-riding precision-guided projectiles.

Unlike other artillery systems, 2A65 howitzer can fire ammunition organic to 'legacy' pieces, e.g. 152mm D-20 gun-howitzer.

The weapon is mounted on a two-trail carriage provided with a firing platform. When trails are being split, the wheels' springing automatically cuts off, which in combination with the three-baffle muzzle brake makes the howitzer very stable at firing. Msta-B has an elevation of 70 degrees, with traverse equalling 28 degrees to the left and 27 degrees to the right. Laying is performed via a two-speed laying mechanism.

The howitzer features separate loading which at any elevation is performed by the spring-operated projectile and propellant charge rammers cocked by the weapon's recoiling parts in the course of firing. There is a loading tray to prevent round's components from falling down. The tray is set into position automatically whenever the wedge-type breech mechanism is open.

When in travelling configuration, Msta-B howitzer is towed by Ural-4320 or KamAZ-43118 truck.

Basic specifications	
Full weight in travelling configuration, kg	7,000
Barrel length, cal	53
Max firing range, m:	
HE-fragmentation round	24,700
rocket-assisted projectile	28,500
cannon-launched guided projectile	22,000-25,000
Weight, kg:	
HE-fragmentation projectile	43.56
RAP	42.86
Cyclic rate of fire, rds/min	7
Max permissible rate of fire, rds/h	110
Operating temperature range, °C	±50

125mm 2S25 SPRUT-SD

Self-Propelled Anti-Tank Gun

Basic specifications	
Combat weight, t	18
Crew	3
Max speed, km/h:	
road	70
afloat	10
Cruising range, km	500
Armament:	
gun	125mm 2A75 smoothbore
ammunition load, rds	40 (22 in autoloader)
machine gun	7.62mm PKT
ammunition load, rds	2,000 in a single belt
Guided missile	9M119
Engine:	
type	2V-06-2S diesel
power, kW (hp)	375 (510)
Transmission	hydromechanical drive

The 2S25 Sprut-SD self-propelled AT gun is designed to combat hostile tanks, artillery pieces, APCs and other mobile and static targets as well as manpower and fire means.

The gun is an armoured tracked amphibious combat vehicle with a formidable gun and missile weapons suite capable of covering distances of up to 500 km without refuelling. Sprut-SD can be transported by aircraft and amphibious assault ships. It is fit for air-landing and air-dropping with crew inside. Boasting high specific power, the SP gun can fight in mountainous terrain and in tropical climate, swim across wet gaps in stride in Sea State up to 3 while firing within the ±30-degree field of fire, and embark on and disembark from amphibious landing craft when afloat and in combat.

The gun features a 125mm smoothbore gun with autoloader, stabilised in two planes, and a coaxial machine gun. Sprut-SD can fire all types of 125mm tank ammunition including laser beam-riding missiles.

120mm 2S31 VENA

Automated Self-Propelled Gun

A further development of Nona, 120mm 2S31 Vena is a multi-purpose amphibious SP tracked artillery system, combining capabilities of a gun, a howitzer and a mortar. It is designed for direct fire support on the battlefield. Vena fires the same range of ammunition Nona does.

Basic specifications	
Combat weight, t	19.1
Crew	4
Max speed, km/h	70
Max firing range, m:	
projectile with pre-engraved driving band	13,000
HE-fragmentation mortar bomb	7,200
Kitolov-2 guided projectile	12,000
Rate of fire, rds/min	8-10
Ammunition load, rds	70

High accuracy is ensured by an automated laying system featuring a computer to generate fire settings. In addition, it mounts an automatic survey and orientation system and a day/night optronic surveillance and target designation system.

Mounting Vena on BMP-3's chassis provides it with enhanced mobility.

120mm NONA-S, NONA-SVK and NONA-K

Guns

Mission

120mm Nona gun is a general-purpose artillery system combining capabilities of a gun, a howitzer and a mortar. Designed for direct fire support on the battlefield, it is equally effective against hostile manpower, and fortifications on the one hand, and tanks on the other. Given such missions, NONA is able to fire ammunition of different types.

Features

Nona fires HE-fragmentation and shaped-charge RAPs as well as 120mm HE-fragmentation, illuminating, smoke and incendiary mortar bombs including those designed for NATO's 120mm mortars. Owing to a highly curved trajectory, effectiveness of HE-fragmentation projectiles equals that of standard 152mm/155mm HE-fragmentation howitzer ammunition.

The minimal firing range is a most crucial indicator for any direct fire support weapon. Nona's gun projectiles feature a minimal firing range of 1.7 km, with that of its mortar bombs equalling 450 m. This enables NONA-S to support friendly troops from firing positions set up amidst infantry formations.

Depending on the mission, Nona can be mounted on tracked BTR-D or wheeled BTR-80 APCs, or on a light-weight wheeled carriage (2S9 Nona-S self-propelled gun, 2S23 Nona-SVK self-propelled gun and 2B16 Nona-K towed gun, respectively).

Weighing only 1,200 kg, 2B16 Nona-K towed gun is being fielded with motorised infantry battalions. When in travelling configuration, it can be towed by a small all-wheel-drive vehicle.

In terms of its versatility and operational flexibility, Nona is second to none the world over. According to expert opinion, a single Nona battery features firepower that is 1.5-2 times more lethal than that of a battalion's organic mortar units.

Basic specifications

	2S9 (2S9-1) Nona-S	2B16 Nona-K	2S23 Nona-SVK
Calibre, mm	120	120	120
Combat weight, t	8.5 (8.7)	1.2	14.5
Crew	4	5	4
Max speed, km/h:			
road	60	-	80
water	9	-	10
Max firing range, m:			
HE-fragmentation projectile	8,800	8,800	8,800
HE-fragmentation mortar bomb	7,100	7,100	7,100
rocket-assisted projectile	12,800	12,800	12,800
Min firing range, m:			
HE-fragmentation projectile	1,700	1,700	1,700
HE-fragmentation mortar bomb	450	450	450
Rate of fire, rds/min	10	8	10
Ammunition load, rds	25 (40)	80	30

KHRIZANTEMA-S

Self-Propelled Anti-Tank Guided Missile System

Mission

The Khrizantema-S ATGM system is designed to counter enemy in-service and future tanks including those fitted with ERA, light armoured vehicles, aircraft, fortifications and manpower.

Features

- round-the-clock, all-weather combat capability
- simultaneous guidance of two missiles to two targets
- ability to automatically track the target and guide the missile (fire-and-forget principle)
- enhanced jam-proof capability
- high manoeuvrability and survivability
- missiles in TLC (9M123 tandem shaped-charge, 9M123F HE)

Basic specifications	
Range of fire, m:	
min	400
max	5,000-6,000
Missile speed	supersonic
Guidance	combined:
	automatic radar command
	semi-automatic laser beam-riding
Armour penetration, mm	1,100-1,200 (behind ERA)
Ammunition load, msl	15
Launcher loading	automatic
Baseline chassis	BMP-3

SHTURM-S

Self-Propelled Anti-Tank Guided Missile System

Mission

The Shturm-S multipurpose ATGM system is designed to fight in-service and future tanks including those protected by ERA, light armoured vehicles, fortifications, small vessels, manpower, low-flying helicopters and other air targets. To engage such a wide array of threats, the system employs missiles fitted with two types of warheads – tandem shaped-charge and HE ones.

Composition

- 9P149 combat vehicle
- 9M114 and 9M120 (tandem) shaped-charge missiles in TLC

Basic specifications	
Range of fire, m	up to 5,000
Missile speed	supersonic
Armour penetration, mm	800 (behind ERA)
Ammunition load, msl	12
Launcher loading	automatic
Rate of fire, rds/min	3-4
Baseline chassis	MT-LB

- 9M114F and 9M120F HE missiles in TLC
- maintenance equipment
- training aids

Features

The system has semi-automatic radio command guidance featuring enhanced ECCM capability, high accuracy and reliability.

The 9P149 combat vehicle is a derivative of the MT-LB multipurpose armoured tractor, featuring high mobility and cross-country capability and being able to swim across wet gaps.

KORNET-E

Anti-Tank Guided Missile System

Mission

The Kornet-E ATGM system is designed to destroy armoured targets with ERA, fortifications and weapons in firing positions.

Composition

- 9P163-1 launcher
- guided missiles in TLC
- 1PN79-1 thermal sight
- maintenance equipment and training aids

Features

The weapon features a semi-automatic countermeasures-resistant laser beam guidance.

The 9M133-1 missile with tandem shaped-charge warhead is lethal to all in-service and future tanks as well as fortifications and field installations.

The 9M133F-1 missile with HE warhead features destructive capability comparable to that of a 155mm HE-fragmentation round and is effective against formidable fortifications, light armoured vehicles and other point targets.

Firing two ATGM types improves the Kornet-E's combat capability to defeat enemy armour and suppress threat weapons.

Basic specifications	
Range of fire, m	
day/night	100-5,500/-3,500
9M133-1 armour penetration, mm	1,000-1,200
ERA penetration	provided
Missile calibre, mm	152
Weight, kg:	
9M133-1 missile in TLC	29
launcher	26
thermal sight	11
Operating temperature range, °C	±50

KONKURS-M

Anti-Tank Guided Missile System

Mission

The Konkurs-M ATGM system is designed to combat ERA-clad armoured targets, fortifications and weapons in firing positions.

Composition

- 9P135M-1 launcher
- 9M113M guided missiles in TLC
- 1PN-79-2 thermal sight
- maintenance equipment and training aids

Features

Konkurs-M has semi-automatic command wire guidance.

The 9M113M missile with tandem shaped-charge warhead is effective against all current and future tanks, as well as fortifications and field installations.

Launcher's design enables the ATGM system to be mounted on wheeled and tracked combat vehicles, automobiles and motorcycles fitted with a buddy seat. The system fires the 9M111, 9M111M and 9M113 missiles.

Basic specifications	
Range, m	
day/night	75-4,000/75-3,500
9M113M armour penetration , mm	750-800
ERA penetration	provided
Missile calibre, mm	135
Weight, kg:	
9M113M missile in TLC	26.5
launcher	22
thermal sight	11
Operating temperature range, °C	±50

METIS-M

Anti-Tank Guided Missile System

Mission

The Metis-M ATGM system is designed to engage armoured targets fitted with ERA, fortifications and weapons in firing positions.

Composition

- 9P151 launcher
- guided missiles in TLC
- 1PN86-VI thermal sight
- maintenance equipment and training aids

Features

The system has semi-automatic command wire guidance.

The 9M131 missile with tandem shaped-charge warhead is lethal to all existing and future tanks as well as fortifications and field installations.

Destructive effect of the 9M131F missile with HE warhead is comparable to that of a 155mm HE-fragmentation round. The missile is effective against formidable fortifications, light armoured vehicles and other point targets.

The ATGM system is man-portable: pack 1 includes a launcher with a combat-ready missile, pack 2 houses two missiles. The 3-man-strong crew carries a basic load of five missiles. The gunner can launch from shoulder if needed.

Missiles require no maintenance and inspection throughout their service life.

Basic specifications	
Range of fire, day and night, m	80-1,500
Rate of fire, rds/min	3-4
9M131 armour penetration, mm	850
Calibre, mm	130
Weight, kg:	
missile in launch tube	13.8
launcher	10
thermal sight	6.5
Operating temperature range, °C	±50

MALYUTKA-2

Anti-Tank Guided Missile System

Mission

The Malyutka-2 ATGM system is an upgrade of well-known Malyutka ATGM, differing from the baseline model in an improved missile and control system.

Malyutka-2 is designed to combat up-to-date tanks including those protected by ERA, other armoured vehicles, pillbox-type fortifications against the backdrop of natural sources of heat and man-made infrared countermeasures.

Basic specifications	
Range of fire, m	400-3,000
Missile weight, kg	13.2
Average flight speed, m/s	up to 130
Armour penetration (tandem shaped-charge warhead), mm	720 behind ERA

Features

Malyutka-2's improved guided missile carries a new warhead and new propellant charges of the booster and sustainer motor. In addition, it can mount an enhanced monobloc shaped-charge warhead, a tandem shaped-charge or an HE one.

Upgraded Malyutka-2 missile can be launched by all Malyutka launchers, such as 9P111 backpack, BMP-1 IFV and BMD-1 ACV, 9P110, 9P122 and 9P133 combat vehicles as well as helicopter-mounted guide rails. The system has manual command or semi-automatic command wire guidance.

152mm 2K25 and 155mm KM-1 KRASNOPOL

Cannon-Launched Guided Projectile Systems

Mission

Both projectiles are designed to destroy enemy tanks, IFVs, SP guns and other armoured and unarmoured targets travelling at a speed of up to 36 km/h and static exposed and sheltered ones, as well as command posts, dugouts, bridges, various fording facilities and light-weight combat, assault landing and transport ships, with hit probability at ranges of up to 12 km and 12-20 km being 0.8-0.9 and 0.6-0.7, respectively.

Features

The system comprises a round with a guided projectile and the 1D22 laser designator/range-finder.

152mm Krasnopol CLGPs can be fired by Msta-S and 2S3M Akatsiya SP artillery systems, D-20 and Msta-B towed guns. 155mm KM-1 Krasnopol CLGPs can be employed by 155mm M109, G6 and other guns.

Krasnopol and Krasnopol-M1 CLGPs are used for both direct and indirect fire.

To fit the ammunition load in the fighting compartment of an SP gun, Krasnopol CLGPs include two sections, with one of them housing warhead, booster and stabiliser assembly, and the other being the guidance package with nose fairing, autopilot and homing head. Prior to firing, both sections are joined via a fast-screw joint. Nose fairing, which is discarded in flight, is designed to protect optics from damage and soiling.

The projectile is a HE fragmentation munition whose formidable top-attack warhead is lethal to all in-service and future tanks.

Basic specifications

	Krasnopol	KM-1 Krasnopol
Calibre, mm	152	155
Range of fire, km	3-20	3-20
Hit probability	0.7-0.8	0.6-0.9
Weight, kg:		
round	50.8	51.3
warhead	20.5	20.3
charge	6.4	6.3
Projectile length, mm	1,305	1,300
Operating temperature range, ºC	-40...+40	-40...+60

SANTIMETR

Cannon-Launched Guided Projectile System

Mission

The Santimetr system is designed to combat enemy armour, rocket and missile launchers in position, C3 facilities, fortified defences, bridges and fording installations.

Composition

- 3VOF63 or 3VOF66 round with 152mm 3OF38 laser-guided HE-fragmentation projectile
- 1D22 laser target designator/range-finder
- 1A35K synchronisation unit
- communications assets (radios and field telephones)
- 152mm artillery systems

Features

Santimetr can be fired by the D-20, ML-20, 2A36 and 2A65 artillery systems as well as the 2S3M, 2S5 and 2S19 SP artillery systems.

The projectile is a HE-fragmentation top-attack munition, extremely lethal to all in-service and future tanks. High precision is achieved via automatic ballistic trajectory adjustment by a corrective pulsed motor 20-600 m from target.

Basic specifications	
Calibre, mm	152
Range of fire, km	2-18
Weight, kg	49.5
Warhead TNT equivalent, kg	5.8
Projectile length, mm	1,195
Trajectory adjustment time, sec	1-3

SMELCHAK

Laser-Guided Mortar Projectile System

Mission

The Smelchak system is deigned to destroy enemy armour, rocket and missile launchers in firing positions, C3 facilities, fortified defences, bridges and crossing points.

Composition

- 2VF4 round with 240mm 3F5 HE guided mortar projectile
- 1D22 laser target designator/range-finder
- 1A35K synchronisation unit
- communications assets (radios and field telephone)
- 240mm mortar

Features

Smelchak is fired by M-240 or 2S4 SP mortar.

The projectile is high-explosive but its formidable warhead features the top-attack modus operandi and is effective against any existing and future tank. High precision is achieved via automatic ballistic trajectory adjustment by a corrective pulsed motor 20-600 m from a target.

Basic specifications	
Calibre, mm	240
Range of fire, km	1.5-9.2
Illumination time, sec	up to 3
Trajectory adjustment time, sec	1.5-3
Weight, kg	134.2
Warhead TNT equivalent, kg	21
Projectile length, mm	1,635

122mm KITOLOV-2M

Cannon-Launched Guided Projectile System

Mission

The Kitolov-2M guided projectile system is designed to provide "one shot-one kill" capability against individual and group, fixed and moving, armoured and soft-skinned targets and fortifications as well as other pinpoint targets.

Composition

- round with guided projectile
- laser target designator/range-finder

Features

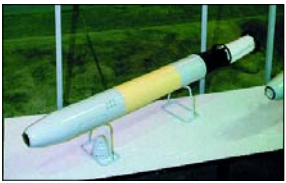
Kitolov-2M can be fired both directly and indirectly.

Kitolov-2M is a HE fragmentation weapon with its formidable top-attack warhead being lethal to all in-service and future tanks.

Basic specifications	
Calibre, mm	122
Projectile length, mm	1,190
Range of fire, km	2-12
Hit probability	0.8
Weight, kg:	
projectile	28
warhead	12.25
charge	5.3
Operating temperature range, ºC	-20...+60

KM-8 GRAN

Guided Weapon System



Mission

The KM-8 Gran system is designed to destroy point and group, static and moving targets and fortifications, using any smoothbore and rifled 120mm mortars.

Composition

- 120mm guided HE-fragmentation mortar bomb
- propellant charge
- 1D22 laser target designator

Features

The round is prepared, loaded and fired in the same way the common mortar bomb is. Mortars need no additional aids to employ the KM-8 system. Gran needs no ranging when firing guided mortar bombs against both fixed and moving targets. An HE-fragmentation warhead performs a lethal top attack on armoured targets.

The KM-8 Gran enables several mortars to engage their targets concurrently without getting in one another's way.

Basic specifications	
Calibre, mm	120
Range of fire, km	1,5-9
Weight, kg:	
mortar bomb	27
warhead/charge	11.2/5.3
Mortar bomb length, mm	1,200
Operating temperature range, ºC	-40...+60

SLEPOK-1

Rocket Artillery Fire Control Automation System

Mission

The Slepok-1 system is designed for both automated and non-automated control of a rocket artillery brigade armed with 9K58 Smerch MRS in preparing combat operations as well as preparing and delivering rocket attacks.

Features

Slepok-1 includes a set of the MP32M1 commonised command vehicles. The vehicles are subordinate to brigade commander and his chief of staff as well as their subordinate battalion and battery commanders (up to 4 and 12 vehicles respectively).

When in automated mode, the system ensures:

- reception, processing, recording, display, generation and transmition of data and commands for rocket attack preparation and execution;
- fulfillment of special theatre-specific, calculation and information tasks;
- prevention of unauthorised launches, and updating of database;
- positioning with 20-m accuracy.

Basic specifications	
Number of workstations	4
Number of datalink channels	8
Data transfer speed, kbit/sec	16
Number of computers, pcs	4
Continuous operation time, hrs	min 48
Operating temperature range, ºC	-40...+50
Chassis	KamAZ-43114

USPEKH

Automated Laying and Fire Control System

Mission

The Uspekh system is designed to automate control over preparation and firing by MRS (Uspekh-R) and SP guns (Uspekh-S). Employment of the system allows to decrease MRS system's and SP guns' reaction time from march as well as shorten their stay in firing position and counter-battery avoidance time.

Features

When operating in automated mode, the system ensures:

- deployment from march on a makeshift firing position;
- survey and launcher (SP gun) navigation;
- reception of target designation data from fire control post and independent fire settings generation;
- laying launcher or SP gun without leaving the vehicle as well as re-establishing elevation and azimuth angles;
- MRS and SP gun round-the-clock, all-weather operation with maximum aimed rate of fire;
- quick redeployment.

Basic specifications	
Precision, gunner's quadrant points:	
laying	0.5-1
initial orientation	0.5-1
Grid bearing retaining error, deg/h	0.1
Launcher (SP gun) positioning error, % of distance covered	max 0.5
Fire settings and mission generation time, sec	max 5

KAPUSTNIK-BM

Automated Fire Control System

Mission

The Kapustnik-BM automated fire control system is designed to direct fire conducted by rocket and field artillery of any calibre and type, including foreign-made systems.

Composition

- 1V153M commonised fire control post mounted on the Ural-43203 chassis
- 1V152M commonised command observation post mounted on the BTR-80 APC's command vehicle chassis

Capabilities

In automated mode, Kapustnik-BM ensures:

- deployment from march on a makeshift firing position as well as topographical survey and orientation of the command post, fire control post and weapons on unprepared firing positions;
- reconnaissance, target position pinpointing, ranging and fire adjustment;
- conjunction with automated control and automated fire control systems of adjacent units, superior echelons of command and combined arms formations via wire and radio communications aids, integration with any surveillance and reconnaissance assets as well as intra-unit integration with command post, fire control post and weapons;
- target data collection, processing, storage and transmission to fire control post and weapons;
- fire planning and control including doing that from remote automated command posts;
- transmission of fire settings to automated laying and fire control systems of individual launchers;
- surface weather forecast in the vicinity of firing positions.

Basic specifications	
Battalion (battery) marching time into action, min	max 6
Fire control post-to-launcher target data transmission,sec	max 30
Reaction time (prepared firing position), min	up to 1
Fire settings accuracy:	
range, % D max	0.5-0.7
direction, mil	2-4
Optical surveillance distance, km:	
day	up to 10
night	up to 3
Comms distance between fire control post (firing position), command post and external reconnaissance assets, km:	
UHF/VHF comms channels	up to 20
HF comms channels	up to 350
Launcher deployment into firing position	free
Battalion (battery) fire control from remote command post	available
Unit and individual launcher self-sustained operation	available
Automated counter-battery fire avoidance	feasible for battery and each individual launcher
Target data collection and processing, fire settings generation and fire planning	for up to 30 targets
Automated encrypted target data sharing among fire control post, command post, firing positions, external reconnaissance assets and superior echelons of command	available

FALTSET-M

Automated Fire Control System

Mission

The Faltset-M system is designed to exercise automated fire control for SP artillery of any type and calibre, including foreign-made weapons.

Composition

- commonised fire control post on MT-LBu chassis
- commonised command-observation post on the MT-LBu chassis

Features

As far as its purpose is concerned, Faltset-M is similar to the Kapustnik-B FCS, but unlike the latter, it features an enhanced protection of mobile fire control and command posts by mounting them on MT-LBu armoured vehicles.

Basic specifications	
Battalion (battery) reaction time from march, min	3
Reaction time for pop-up targets, sec:	
battalion	50
battery	40
Full fire preparation mean errors	
in range, %	0.5-0.7
in direction, mil	2-4
Target illumination range, km	up to 7
Target detection by organic command post assets, km:	
day	10
night	3

ULYBKA

Meteorological System

Mission

Ulybka meteorological system is designed to obtain weather data (wind direction and speed, atmospheric pressure, ambient temperature, relative air humidity) in support of field artillery and MRS fires, tactical and theatre missile launches, weather forecasts, calculation of kill zones and chemical agent dissemination areas, and aircraft operations.

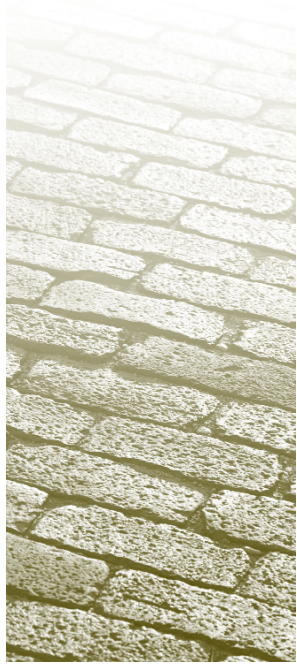
The system comprises two Ural-43203 trucks with special equipment and a trailer.

Features

It features two operating modes - radar and radio direction-finding ones. The former produces balloon's angular coordinates, i.e. azimuth and elevation, and slant range. Balloon's flight altitude is calculated via its measured slant range and elevation.

Radio direction-finding mode is a passive one measuring only angular coordinates of MRZ-5 balloon, whose altitude is measured by atmospheric pressure gauged by atmospheric pressure sensor.

Basic specifications	
Type of atmospheric probing	temperature, humidity, wind
Max probing altitude, km	30-40
Max probing range, km	up to 200
Weather report generation time, min:	
up to 14-km altitude	45
up to 30-km altitude	90
Mean time between failures, hrs	210
Crew	5



LAND FORCES WEAPONS

ENGINEER VEHICLES

BMR-3M

Armoured Mine-Clearing Vehicle

Mission

The BMR-3M armoured mine-clearing is designed to clear landmines encountered by friendly forces moving in convoys.

Features

BRM-3M is derived from the T-90 MBT's chassis, features reinforced armour protection of the bottom under fighting compartment and is equipped with the KMT-7 combined mine roller/plough which provides usage of EMT electromagnetic add-on device to handle proximity-fused landmines. In addition, vehicle is fitted with combat engineer equipment to detect and destroy landmines and spot cables, as well as combat engineer individual protection means.

Equipment

The vehicle mounts enclosed 12.7mm NSVT anti-aircraft machine gun. In addition, fighting compartment's side and rear walls are fitted with embrasures for combat engineers to fire.

BMR-3M mounts ERA and nuclear blast wave, radioactive fallout and chemical agent protection system to protect the crew and internal equipment.

It is fitted with self-entrenchment and fording tools, smoke generator and smoke dischargers to set smokescreens, and fire-suppressant equipment to fight fire both inside and outside the vehicle.

To generate special wideband signals to jam landmine fuse control devices, vehicle is outfitted with the RP-377IV wideband signal generator.

BMR-3M mounts a cargo platform to carry the KMT-7 mine roller/plough sections. To load them onto cargo platform and unload them from it, vehicle is provided with a derrick crane fitted with a manually-driven winch.

The vehicle has a crew of five: commander, driver and three combat engineers.

BMR-3M has two compartments for housing troops and the power plant.

Basic specifications	
Weight, t:	
vehicle	43
vehicle with KMT-7 mine roller/plough	51
Crew	2+3
Armament	12.7mm remotely-controlled MG
Sight	PZU-7M
Engine:	
type	12-cylinder V-type multi-fuel diesel
power, kW/hp	618/840
Specific ground pressure, kg/sq. cm	0.97
Speed, km/h:	
mine clearing	5-12
trench digging	8-12
max road	60
Fuel endurance, km	550

IMR-2MA

Combat Engineer Vehicle

Mission

The IMR-2MA combat engineer vehicle is designed for mobility operations, creating convoy tracks and accomplishing other engineer tasks. To date, IMR-2MA is the most efficient and promising combat engineer vehicle. It can perform all types of work under fire, on the battlefield contaminated by nuclear fallout, and in the atmosphere contaminated by aggressive gases, vapours or chemical agents and filled with smoke and dust. Vehicle's reliability has been proven both in combat and in disaster relief operations.

IMR-2MA is equally efficient as a combat engineer vehicle and as an emergency rescue vehicle.

Features

IMR-2MA features formidable multifunction dozer blade and mine plough, both being complemented nicely by multipurpose manipulator that ousted legacy gripper-type manipulator tool. A multipurpose manipulator can even take and hold objects as small as a matchbox, e.g. radioactive fragments. It has capabilities of a manipulator, can operate as a grab bucket, a pull and push shovel, a scraper, and a ripper.

Capabilities

IMR-2MA is capable of creating tracks in moderately rugged terrain, low forest, unbroken snow-covered expanses and on slopes, rooting stumps out, felling trees, breaching abatis, rubble, minefields and non-explosive obstacles. The vehicle can cope with rubble and damaged buildings and structures, dig trenches and foundation pits, dig out sanded-in materiel and shelters, fill pits, ditches and ravines, prepare ditches, escarpments, dams, and crosses over tank ditches and escarpments. IMR-2MA can set up sections of bridges and make ingress and egress at fording sites.

Basic specifications	
Weight, t	48
Engine power, kW/hp	618/840
Max speed, km/h	60
Fuel endurance, km	up to 500
Breaching speed, km/h:	
abatis	0.35-0.4
rubble	0.28-0.35
minefield	5-12
Speed of:	
creating convoy tracks, km/h	up to 12
ditch filling and ingress preparation, cu. m/h	350-360
foundation pit digging, cu. m/h	200-250
6m-high slope ingress preparation, cu. m/h	350-400
loose ground loading/unloading, cu. m/h	15-20
Crane lifting capacity, kgf	2,000
Max crane radius, m	8

GMZ-3

Tracked Minelayer

Mission

The GMZ-3 tracked minelayer is designed to lay antitank mines into the ground (snow) or scatter them on top of the ground (snow).

Features

To lay mines, GMZ-3 uses the TM-57 and TM-62 antitank mines with impact and proximity fuses. When being laid, mines get onto a feeder and then via chutes in the rear hull wall are fed onto a minelayer that mounts an arming device. When laid on the ground (snow), mines are emplaced on top of the ground (snow), and when buried into the ground (snow), they are placed via a mine plough device into furrows cut by the mine plough to be concealed by reverse blades. Some time later, mines arm themselves automatically.

The vehicle has armour protection against small arms fire.

Basic specifications	
Crew	3
Mine load, pcs	208
Minelaying speed, km/h	6-16
Max road speed, km/h	63
Fuel endurance, km	up to 500
Mine loading time, min	20
Armament	7.62mm PKT MG
Single-row minefield length, m:	
impact-fuse mines	1,000
proximity-fuse mines	2,000

MTU-90

Armoured Bridgelayer

Mission

The MTU-90 armoured bridgelayer is designed to set up bridges for tanks and other combat vehicles to cross gaps up to 84m wide.

Features

The vehicle boasts a bridge that is a drastic novelty in terms of design and operational principle. The bridgelayer is an armoured tracked vehicle derived from the T-90S MBT chassis. It carries the bridge and mounts relevant equipment to deploy it. To lay the bridge, it has to be overturned over the gap, with its centre-section snapping into the operational configuration right over the gap to be crossed. MTU-90 also can carry, lay and retrieve a bridge section of TMM-6 heavy mechanised bridge.

Main strength of the MTU-90 armoured bridgelayer lies in its crew's ability to set up bridge-type crossing points under small arms fire without having to leave vehicle.

Basic specifications	
Weight, t	46
Crew	2
Bridge laying time, min	2-2.5
Bridge specifications:	
lifting capacity, t	50
length, m	25
roadway width, m	3.55
Throughput, veh/h	200–400
Max road speed, km/h	60
Average speed across bridge, km/h:	
tracked vehicles	20
wheeled vehicles	30

TMM-6

Heavy Bridge-Building System

Mission

The TMM-6 heavy bridge-building system is designed to lay multi-section bridge crossings across gaps up to 100m wide and 5m deep to provide mobility to wheeled and tracked vehicles weighing up to 60 tonnes.

Features

TMM-6 includes two bridgelayers, four carriers and six bridge sections. The bridgelayer is derived from an enhanced-mobility 8x8 truck and mounts equipment and hydraulically-driven mechanisms to carry and lay bridge sections.

The bridgelayer provides its crew with protection against radioactive fallout for crossing contaminated terrain. Also, it is equipped with communications means.

The bridge organic to TMM-6 is environment-friendly since it is emplaced without damming river, moving ground and disturbing river bottom.

Basic specifications	
Total crew (per vehicle)	12 (2)
Bridge specifications:	
lifting capacity, t	60
length of 1/6 bridge section(s), m	17/102
track width, m	1.48
roadway width, m	4.0
102m bridge deployment time, min	max 50
Throughput, veh/h	400
Speed, km/h:	
max road	70
vehicles across bridge	20
Fuel endurance, km	1,000

LAND FORCES WEAPONS

INFANTRY WEAPONS

30mm AGS-17

Automatic Grenade Launcher

Mission

The 30mm AGS-17 automatic grenade launcher is designed to engage enemy manpower and light weapon systems, both exposed and protected.

Features

The weapon fires the 30mm VOG-17M and VOG-30 impact-fuse fragmentation rounds. Ammunition is fed from a 29-round metal link belt box, mounted on the right-hand side.

The grenade launcher features a simple design, which provides fail-safe operation in any environment. AGS-17 delivers flat and curved trajectory automatic fire. In a carrying position it brakes up into three main units: grenade launcher proper, mount, and sight.

Apart from its mounted version, the grenade launcher can also be employed from helicopters, gunboats, remotely controlled systems, armour, and to set up strongholds.

30mm AGS-30

Automatic Grenade Launcher

Mission

The 30mm AGS-30 automatic grenade launcher is a very light and most efficient team-operated support weapon. It is designed to kill hostile manpower and fire weapons, either unsheltered, entrenched or located behind or inside natural covers (in ravines or on reverse hill slopes, and the like).

Features

AGS-30 is unbeatable in weight in its class. The grenade launcher has simple design, which ensures fail-safe operation in any environment.

AGS-30 fires the same ammo as AGS-17. The grenade launcher is blowback-operated, with sear triggering fire. The opposing spring fully absorbs breech recoil, thus facilitating percussion-free operation. This design solution allowed for a considerable slash in the weapon's weight, leaving accuracy of fire intact. Trigger assembly can operate only in automatic mode.

Basic specifications

	AGS-17	AGS-30
Calibre, mm	30	30
Ammo	VOG-17M, VOG-30	VOG-17M, VOG-30
Effective range of fire, m	1,700	1,700
Muzzle velocity, m/s	185	185
Weight, kg:		
grenade launcher without sight and box	31	16.5
box with 29 rounds	14.5	14.5
Automatic rate of fire, rds/min	420	400
Crew	3	2

SHMEL

Infantry Rocket Flamethrower

Mission

The Shmel disposable flamethrower is employed to increase combat capabilities of the ground forces. It is designed to attack personnel and weapon systems in various covers, as well as to destroy fortifications, automobiles and lightly armoured vehicles, and set fire and generate smoke screens.

Features

Shmel is most effective in terrains, where artillery or armoured vehicles are restricted, i.e. in mountains, built-up areas, forests, on the plain when roads are impassable, or when enemy aviation and artillery enjoy obvious superiority, and also in ranger (guerrilla) operations.

The flamethrower can be fitted with three types of warheads:

- RPO-A (thermobaric) warhead, used to attack protected weapon systems in built-up areas, fields, mountains, as well as to destroy covers, automobiles and lightly armoured vehicles;
- RPO-Z (incendiary) warhead, used to set landscape, buildings, and oil depots on fire;
- RPO-D (smoke) warhead, used to set up smoke screens, blinding weapon system crews, as well as to create unbearable conditions inside various covers.

The Shmel flamethrower boasts high combat capabilities and reliability, and is easy to handle.

General description

The disposable launcher (which is also sealed container for storing and transporting the warhead) houses a capsule-warhead and a gunpowder booster. The launcher is made of glass-reinforced plastic. It mounts firing mechanism with safety catch and mechanical sight, consisting of a fore sight and an adjustable folding dioptre backsight. The flamethrower can be fitted with an optical sight as well. A portable set of Shmel includes two loaded launchers, connected so as to make a 24-kg pack to be carried on the back.

When launched, the capsule-warhead flies along a ballistic trajectory. The warhead is fin-stabilised. The unique design of the warhead ensures minimum variation of muzzle velocities and high accuracy. Hit probability against an IFV at 400 m is 0.8. Lethality of the thermobaric warhead is similar to that of a 122mm HE-fragmentation round. The flamethrower is shoulder-fired. It can also be fired from a room (over 60 cu. m in volume), and with obstacles behind it.

The RPO-A, RPO-Z and RPO-D-equipped flamethrowers are in service with the Russian Armed Forces.

Basic specifications	
Calibre, mm	93
Length, mm	920
Weight, kg	12
Range of fire, m:	
maximum	1,000
effective	600
minimum	25
Firing position	standing, kneeling, prone

40mm RPG-7V1

Portable Anti-Tank Rocket Launcher

Mission

Though called anti-tank, RPG-7V1 armed with various-purpose rockets is a truly multirole rocket launcher. It is designed to engage armoured vehicles, various weapon systems, as well as personnel in open terrain and behind cover. In addition to non-splitting barrel version, there is a special variant for airborne troops (RPG-7D), with the barrel split in two parts for more convenient parachuting.

Features

The launcher fires various-purpose RAPs. The PG-7VL shaped-charge rocket is designed to counter armoured targets and personnel in protective covers. The PG-7VR tandem shaped-charge rocket is designed to engage armoured targets, including those fitted with ERA, as well as personnel in protective covers. The TBG-7V multiple effect (HE, fragmentation and incendiary) rocket is designed to attack personnel in open terrain or behind shelters, and destroy light armoured vehicles and various fortifications. The OG-7V fragmentation rocket is designed to kill personnel, including those wearing body armour, as well as destroy soft-skinned vehicles. The launcher is breech-loaded.

The rocket launcher mounts a standard attachment point for a day optical sight or a night optronic one. Also, a mechanical sight is an option. A complete set of the launcher includes a detachable bipod.

RPG-7V1 is easy to handle and reliable in any conditions. Alongside with the Kalashnikov assault rifles, these weapons are most popular in the world.

Launcher basic specifications	
Calibre, mm	40
Weight without optical sight, kg	6.7
Length, mm	950 (630 for RPG-7D in carrying position)
Rate of fire, rds/min	4-6

Rocket basic specifications				
	PG-7VL	PG-7VR	TBG-7V	OG-7V
Warhead	shaped-charge	shaped-charge, tandem	thermobaric	fragmentation
Warhead calibre, mm	93	105	105	40
Weight, kg	2.6	4.5	4.5	2.0
Effective range of fire, m	300	200	200 (550 with UP-7V device)	700
Penetrated cover, m:				
homogeneous armour	over 0.5	over 0.6 (behind ERA)		
brickwork	over 1.5	over 2.0		
reinforced concrete	over 1.1	over 1.5		
log-and-earth	over 2.4	over 3.7		
Personnel engagement:				
kill radius, m			10	
kill area for personnel in body armour, sq. m				150

RPG-26

Anti-Tank Rocket

Mission

A light-weight disposable portable AT rocket launcher with the RPG-26 AT rocket is designed to counter armoured vehicles, weapon systems and personnel behind covers. It is used to increase combat capabilities of ground forces.

Features

RPG-26 features superb characteristics, it is easy-to-handle and reliable in operation. It incorporates the most sophisticated technologies for this type of weapon systems.

The rocket with shaped-charge warhead is placed in the barrel and fixed by a special device, which disintegrates when the weapon is fired. The barrel is also a container for storing and transporting the rocket. It is made of glass-reinforced plastics and sealed by rubber lids on both ends. It mounts a trigger mechanism with a safety catch and a mechanical sight, consisting of a folding fore sight with sighting marks and a dioptre backsight that can be used to adjust fire with respect to temperature. Only three simple steps are required to bring the weapon into firing position and back into carrying one. The booster burns only when inside launcher. After that the rocket flies along a ballistic trajectory. The RPG-26 rocket is fin-stabilised.

RShG-2 assault rocket

The RShG-2 assault rocket is derived from RPG-26. A thermobaric warhead is of a multiple effect (HE, fragmentation and incendiary). It effectively destroys light armoured vehicles, weapon systems, and personnel in open terrain or behind shelters, as well as in confined spaces of up to 200 cu.m., in bunkers or trenches if blown up at a 1.5-2m range from a trench or an embrasure.

Basic specifications

	RPG-26	RShG-2
Warhead	shaped-charge	thermobaric
Warhead calibre, mm	72.5	72.5
Launcher weight, kg	2.9	4.0
Length, mm	770	770
Effective range of fire, m	250	350
Penetrated cover, m:		
homogeneous armour	over 0.44	-
reinforced concrete	over 1.0	-
brickwork	over 1.5	-
wood and ground	over 2.4	-

RPG-27

Anti-Tank Rocket

Mission

A disposable portable anti-tank rocket launcher with the RPG-27 AT rocket is designed to counter armoured vehicles fitted with ERA, as well as weapon systems and personnel in various shelters. It is used to increase combat capabilities of land forces.

Features

RPG-27 features superb characteristics. It is easy to handle, reliable in operation, and incorporates the most sophisticated technologies for this type of weapon.

The rocket with a tandem shaped-charge warhead is placed inside the barrel, where it is fixed by a special device, which disintegrates when the weapon is fired. The barrel is also a container for storing and transporting rocket. The barrel is made of glass-reinforced plastics and sealed by rubber lids on both ends. The launcher mounts a trigger mechanism with a safety catch and a mechanical sight, consisting of a folding fore sight with sighting marks and a dioptre backsight that can be used to adjust fire with respect to temperature. Only three simple steps are required to bring the weapon into firing position and back into carrying one. The booster burns only when inside the launcher, then the rocket flies along a ballistic trajectory. The RPG-27 rocket is fin-stabilized.

RShG-1 assault rocket

The RShG-1 assault rocket is derived from

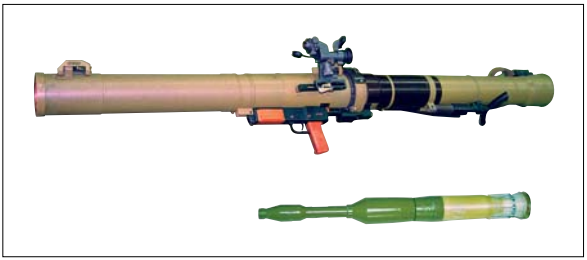
RPG-27. A thermobaric warhead is of multiple effect (HE, fragmentation and incendiary). The RShG-1 rocket effectively destroys light armoured vehicles, weapon systems and kills personnel in open terrain or behind shelters. It is capable of killing personnel in rooms, as well as in confined spaces of up to 300 cu.m in volume, or in trenches and bunkers if blown up at a 2m range from a trench or an embrasure.

Basic specifications

	RPG-27	RShG-1
Warhead	shaped-charge, tandem	thermobaric
Warhead calibre, mm	105	105
Launcher weight, kg	8.3	8.3
Length, mm	1,135	1,135
Range of aimed fire, m	200	600
Target penetration, m:		
homogeneous armour	over 0.6	-
reinforced concrete and brick	over 1.5	-
log-and-earth	over 3.7	-

RPG-29

Portable Anti-Tank Rocket Launcher



Mission

The RPG-29 portable AT rocket launcher with the PG-29V rocket is designed to destroy armoured vehicles, weapon systems and personnel in various shelters.

Features

RPG-27 features superb characteristics, it is easy-to-handle and reliable in operation.

The rocket launcher fires the PG-29V rocket with a tandem shaped-charge warhead. The launcher is breech-loaded. The booster burns only while inside the launcher, then the rocket flies along a ballistic trajectory, providing a close pattern of fire. It is stabilised by eight fins. There is a tracer provided to adjust fire. The tandem warhead allows killing hard targets including state-of-the-art tanks fitted with ERA.

General description

To make operation convenient, the barrel is divided into two relatively equal parts. In carrying position, the two parts are transported by one man in a special kit on his back. The rocket is stored in the breech end of the launcher. The gunpowder booster is ignited by an electric pulse from the trigger mechanism generator of the launcher. The trigger mechanism has a safety catch. The breech end of barrel mounts a folding bipod.

The rocket launcher houses a standard attachment point for various optical sights. A complete set of the rocket launcher includes a day optical sight. It also has a mechanical sight. For firing at night, the launcher can be fitted with a night sight.

The launcher's combat crew comprises an operator and his assistant.

RPG-29 is in service with the Russian Armed Forces.

Basic specifications	
Launcher calibre, mm	105
Rocket designation	PG-29V
Warhead type	shaped-charge, tandem
Weight, kg:	
launcher without optical sight	11.5
rocket	6.1
Effective range of fire, m	500
Target penetration, m:	
homogenous armour behind ERA	over 0.6
brick and reinforced concrete	over 1.5
log-and-earth	over 3.7

40mm 6G30

Six-Round Portable Grenade Launcher

Mission

The 6G30 portable grenade launcher is designed to destroy hostile personnel, both exposed and in covered positions, fox-holes, trenches, defiles and on counterslopes, as well as other types of unarmored targets. The weapon fires grenades along flat and curved trajectories at a high rate of fire.

Basic specifications	
Calibre, mm	40
Number of barrels	6
Weight, kg	6.0
Length, mm:	
combat mode	680
transportation mode	510
Combat rate of fire, rds/min	15-18
Max range of fire, m:	
VOG-25, VOG-25P	400
Gvozd	150

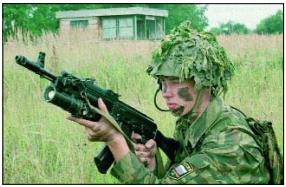
Features

The launcher employs the 40mm VOG-25 and VOG-25P fragmentation rounds, Gvozd gas grenades, as well as special purpose rounds (rubber, tear-gas, etc.).

The weapon features a revolver design, with the barrel assembly rotated by a spring that is to be wound prior to operation. A trigger mechanism is self-cocking. The weapon is fitted with a folding butt. Grenades are rear-loaded, while unloading is performed by pressing an extractor. The launcher is equipped with a safety lock and features a mechanic bracket-type sight used to control drift of grenades.

40mm GP-25

Underbarrel Grenade Launcher



Mission

The GP-25 singleshot underbarrel grenade launcher provides additional firepower to personnel armed with the AKM (AKMS) and AK74 (AKS74) assault rifles. It is designed to engage personnel and light weapon systems both in open terrain and behind covers (open trenches, slopes, ravines, etc.).

Features

The grenade launcher fires grenades with a driving band on the lead edge, namely the VOG-25 fragmentation and VOG-25P rebounding fragmentation (explodes 0.5-1m above ground) grenades. Besides, special operations may require application of smoke grenades and grenades stuffed with irritants.

Because the launcher is fed from the barrel and has no cartridge, as the propelling charge is incorporated into the grenade, the grenade launcher can accurately fire at a rate of 5 rds/min with high accuracy.

To ensure convenient operation of the launcher, the hull of a trigger mechanism features a short pistol grip. Also, a rubber plate is attached to the back of the butt to reduce recoil.

Basic specifications	
Calibre, mm	40
Grenades	VOG-25, VOG-25P
Max range of fire, m	400
Muzzle velocity, m/s	76.5 (VOG-25), 75 (VOG-25P)
Weight, kg:	
launcher	1.5
grenade	0.250 (VOG-25), 0.278 (VOG-25P)
Length, mm	323
Rate of fire, rds/min	5

40mm GP-30

Underbarrel Grenade Launcher

Mission

The GP-30 singleshot underbarrel grenade launcher provides additional firepower to personnel armed with the AKM (AKMS) and AK74 (AKS74) assault rifles. It is designed to engage personnel and light weapon systems both in open terrain and behind covers (open trenches, slopes, ravines, etc.).

Features

The grenade launcher fires grenades with a driving band on the lead edge, namely the VOG-25 fragmentation and VOG-25P rebounding fragmentation (explodes 0.5-1m above ground) grenades. Besides, special operations may require application of smoke grenades and grenades stuffed with irritants.

Because the launcher is fed from the barrel and has no cartridge, as the propelling charge is incorporated into the grenade, the grenade launcher can accurately fire at a rate of 5 rds/min with high accuracy.

To ensure convenient operation of the launcher, the hull of a trigger mechanism features a short pistol grip. Also, a rubber plate is attached to the back of the butt to reduce recoil.

Basic specifications	
Calibre, mm	40
Grenades	VOG-25, VOG-25P
Max range of fire, m	400
Muzzle velocity, m/s	76.5 (VOG-25), 75 (VOG-25P)
Weight, kg:	
launcher	1.3
grenade	0.250 (VOG-25), 0.278 (VOG-25P)
Length, mm	323
Rate of fire, rds/min	5

5.45mm AN-94

Assault Rifle

The AN-94 Nikonov assault rifle is a new-generation recoil-operated weapon. A unique design delays the recoil force affecting an operator after firing, thus ensuring high grouping of fire with short bursts.

In automatic mode, first two rounds are fired at 1,800 rds/min. The trigger mechanism allows single fire, two-round bursts fire, and full automatic fire. A selector lever is placed on the left above the handle, while a safety catch is inside the trigger guard.

A folding butt makes operation convenient. A sighting system is of open type featuring luminous heads, mounted on the fore and back sights, to facilitate fire at night. There is also a standard attachment for various optical and optronic sights.

AN-94 can fire all kinds of 5.45x39mm rounds. Feed is from a 30-round magazine organic to the AK74 assault rifle. Installation of the GP-25 or GP-30 grenade launchers is optional.

Basic specifications	
Cartridge	5.45x39
Muzzle velocity, m/s	900
Effective range of fire, m	700
Empty weight, kg	4.0
Length, mm	943/728 (butt folded)
Magazine capacity, rds	30
Rate of fire, rds/min	up to 60 (single shots), up to 120 (bursts)

5.45mm AEK-971

Assault Rifle

The AEK-971 assault rifle has unique design with balanced automatics which eliminated gases blowback and impact of moving parts in the front and in the rear positions. It is much easier to keep the weapon on the line of sight and grouping of shots is better when firing bursts. AEK-971 is much superior to all existing assault rifles, as far as accuracy of long burst fire is concerned. A trigger mechanism allows single fire, three-round bursts fire, and full automatic fire.

A folding butt makes operation convenient. A sighting system is of open type featuring luminous heads, mounted on the fore and back sights, to facilitate fire at night. There is also a standard attachment for various optical and optronic sights.

AEK-971 can fire all kinds of 5.45x39mm rounds. Feed is from a 30-round magazine. Installation of the GP-25 or GP-30 grenade launchers is optional.

Basic specifications	
Calibre, mm	5.45
Weight without magazine and bayonet, kg	3.46
Muzzle velocity, m/s	900
Rate of fire, rds/min	1,800 and 600
Length, mm:	
butt folded	728
butt extended	943
Magazine capacity, rds	30
Max range, m	1,000
Modes of fire	single, 3-round burst, automatic

5.45mm KALASHNIKOV

Assault Rifles

Mission

The AK74M modernised assault rifle was developed to replace AK74 and its derivatives. It has been adopted for service with the Russian Armed Forces. The new weapon boasts enhanced ergonomics while retaining the best combat characteristics of Kalashnikov-developed small arms.

Design

AK74M is of a standard design. It is a gas-operated weapon with the receiver locked by a rotating bolt. A hammer-type trigger mechanism ensures selective fire. A fire selector, which is dual-hatted as a safety catch, blocks the trigger and sear when engaged.

The weapon sight is of open type and comprises a foresight and a backsight, a U-shaped leaf sliding on a ramp. To fire at night, the fore and back sight can be fitted with luminescent add-on night sights. AK74M can be outfitted with the GP-25 or GP-30 underbarrel grenade launcher. Ammunition is fed from a 30-round two-row curved box magazine interchangeable with that of the AK74 assault rifle.

The AK74 modernisation boils down to fitting a standard fixture to mount various optical and optronic sights, a folding plastic buttstock, an improved muzzle brake, a more ergonomic plastic forearm and a reinforced barrel box. In addition, the upgrade results in simpler production techniques for some units of the weapon.

Advanced materials and a special phosphate finish of its metal parts enable the assault rifle to survive even in most adverse climate environments.

Derivatives

The AK105-1 version features a simpler design of trigger mechanism, which provides single fire only, while the AK105-2 derivative has trigger mechanism, allowing both single and automatic fire plus three-round burst capability.

AK74M and AK105 can fire all types of 5.45x39mm rounds.

Basic specifications

	AK74M	AK105
Cartridge	5.45x39	5.45x39
Muzzle velocity, m/s	715	840
Effective range of fire, m	1,000	500
Weight, kg:		
empty	3.4	3.0
loaded	3.7	3.5
Length, mm	943/705 butt folded	824/586 butt folded
Barrel length, mm	415	314
Magazine capacity, rds	30	30
Combat rate of fire, rds/min	up to 40 (single shots), up to 100 (bursts), 600 (cyclic)	

5.56mm AK101 and AK102

Assault Rifles

Mission

The AK101 and AK102 Kalashnikov assault rifles have been designed for export use with the associated 5.56x45mm NATO rounds. The AK101's barrel is 415mm-long, while that of AK102 is 314mm-long. Both assault rifles retained the best of Kalashnikov weapons characteristics.

General description

AK101 and AK102 are of standard design. The assault rifles are gas-operated, with the barrel blocked by a rotating breech. A cock-type trigger mechanism ensures single and automatic fire. A selector lever, which is also a safety catch, blocks the trigger and sear when activated.

An open-type sighting system includes a foresight and an adjustable sector type sight. A complete set of the assault rifle includes luminous heads, mounted on the fore and back sights. Also, the AK101 assault rifle can mount the GP-25 (GP-30) grenade launcher, which improves its combat capabilities drastically. The rifles are fed from a two-row 30-round curved box magazine.

The assault rifles have a standard attachment point for various optical or optronic sights and a folding plastic butt, as well as an upgraded muzzle brake/compensator and an ergonomic plastic forestock. They also feature a more robust lid of the barrel chamber. New materials and special lacquering and bonderite of assault rifles' metal parts ensure long service life of the weapons even in adverse weather.

AK101 and AK102 can fire all types of 5.56x45mm rounds.

The AK101-1 version features a simpler design of the trigger mechanism, which provides single fire only, while the AK-102-1 derivative has the trigger mechanism, allowing both single and automatic fire plus three-round burst capability.

Basic specifications

	AK101	AK102
Cartridge	5.56x45	5.56x45
Muzzle velocity, m/s	910	850
Effective range of fire, m	1,000	500
Weight, kg:		
empty	3.6	3.2
loaded	4.0	3.6
Length, mm	943/704 (butt folded)	824/586 (butt folded)
Barrel length, mm	415	314
Groove spacing	178	178
Magazine capacity, rds	30	30
Rate of fire, rds/min	up to 40 (single shots) up to 100 (short bursts) 600 (cyclic)	

7.62mm AK103 and AK104 KALASHNIKOV

Assault Rifles

Mission

The AK103 assault rifle was developed to replace AKM and its derivatives. The new weapon boasts enhanced ergonomics while retaining the best combat characteristics of Kalashnikov-developed small arms. It was adopted for service with the Russian Armed Forces.

Design

AK103 is of a standard design. It is a gas-operated weapon. Its receiver is locked by a rotating bolt. A hammer-type trigger mechanism ensures selective fire. A fire selector, which is dual-hatted as a safety catch, blocks the trigger and sear when engaged.

The weapon sight is of open type and comprises a foresight and a backsight, a U-shaped leaf sliding on a ramp. To fire at night, the fore and back sight can be fitted with luminescent add-on night sights. AK103 is provided with fixtures to mount the GP-25 or GP-30 underbarrel grenade launchers. Ammunition is fed from a 30-round two-row curved box magazine interchangeable with that of the AKM assault rifle.

The weapon is fitted with a standard fixture to attach various optical and optronic sights and features a folding plastic butt-stock. Also, AK103 has a reinforced barrel box, an improved muzzle brake and a more ergonomic plastic fore-end. In addition, production techniques for some of the weapon's elements have been streamlined. Advanced materials and a special phosphate finish of its metal parts enable the assault rifle to survive even in most adverse climate environments.

Derivatives

AK103 served as the baseline model for deriving several modifications, including AK104, featuring a shorter, 314mm-long barrel. The AK103-1 version features a simpler trigger mechanism that ensures only single-shot fire. The AK103-2 derivative provides both single-shot and full-auto fire as well as three-shot bursts.

AK103 and AK104 are chambered for all types of 7.62x39mm cartridge.

Basic specifications

	AK103	AK104
Cartridge	7.62x39	7.62x39
Muzzle velocity, m/s	715	670
Effective range of fire, m	1,000	500
Weight, kg:		
empty	3.3	2.9
loaded	3.8	3.6
Length, mm	943/700 (butt folded)	824/586 (butt folded)
Barrel length, mm	415	314
Rifling pitch	240	240
Magazine capacity, rds	30	30
Rate of fire, rds/min	up to 40 (single shots), up to 100 (short bursts), 600 (cyclic)	

RPK74M and RPK203 KALASHNIKOV

Light Machine Guns

Basic specifications

	RPK74M	RPK203
Calibre, mm	5.45x39	7.62x39
Effective range of fire, m	1,000	1,000
Direct shot range, m	460	365
Magazine capacity, rds	45	40
Cyclic rate of fire, rds/min	600	600
Combat rate of fire, burst/single shot, rds/min	150/50	150/50
Muzzle velocity, m/s	960	745
Weight, kg	5.06	5
Length, mm	1,065	1,065
Height with/without bipods, mm	365/340.5	365/295
Width (butt folded), mm	105	105

Mission

The RPK74M and RPK203 machine guns are designed to engage enemy personnel and weapon systems by day and night. Optical day and night sights are mounted on side of barrel box.

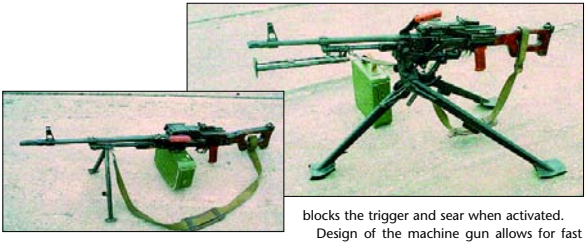
Features

The machine guns provide both single and full-automatic fire. Automatic fire is the main mode. The machine guns can fire either short bursts of up to five rounds or long bursts of up to 15 rounds, or they can fire non-stop. A foresight provides effective fire at a range of up to 1,000 m. It features a lateral fire adjustment device. The machine guns are fed from a box-type magazine.

For convenient operation from airborne fighting vehicles, machine guns are fitted with a folding plastic butt and bipods. A complete set includes two magazine bags with four magazines in each, cleaning accessories, oilcan, and clips for loading magazines.

7.62mm PKM, PKMS, PKMB, PKMN and PKMSN

Standard Machine Guns



Mission

The PKM modernised Kalashnikov machine gun is a lethal weapon for fire support of motorised rifle units, designed to kill enemy personnel and to destroy weapon systems.

General description

Its successful design combines firepower of a heavy machine gun with manoeuvrability of a light one. The weapon derives from the world-famous PK Kalashnikov machine gun. Modernisation consisted in decreasing weight of the machine gun and improving its technological effectiveness. Several modifications of the weapon have been developed, including the PKMS heavy machine gun and the tripod-equipped, swivel-mounted PKMB machine gun for employment from APCs or automobiles. Their versions equipped with night optronic sights are PKMN and PKMSN.

PKM family machine guns can fire all types of 7.62x54mm rounds. The machine guns are fed from 25- or 50-round metal belt consisting of disintegrating links. Loaded belts are transported in boxes for 100, 200 and 250 rounds each.

The machine gun is gas operated. To ensure reliable operation in various operating conditions the weapon is fitted with a gas regulator. The barrel is blocked by rotation of the breech. A striker-type trigger mechanism is activated by the breech block. It has a rear sear, and provides for automatic fire only. A safety catch blocks the trigger and sear when activated.

Design of the machine gun allows for fast change of the barrel without disassembling the whole weapon. An additional barrel is included into a complete set of the machine gun. A kit of spare parts is attached to the machine gun proper.

An open-type sight includes a foresight and an adjustable sector-type backsight with a device for lateral adjustments. A complete set of the PKMS and PKMSN machine guns (PKMN-1, PKMSN-1, PKMN-2, PKMSN-2, PKMN-3 and PKMSN-3) includes various night vision optronic sights. These machine guns mount a standard attachment point for various sights on the left side of the barrel chamber.

Easy-to-handle, reliable and extremely powerful, the PKM machine gun ranks among the world's best weapons, which explains its wide use.

Basic specifications	
Cartridge	7.62x54
Muzzle velocity, m/s	825
Effective range of fire, m	up to 1,500
Weight, kg:	
empty, without mount	7.5
box with belt for 100/200 rounds	3.9/8
mount (PKMS)	4.5
Length, mm	1,160
Belt capacity, rds	100, 200 and 250
Rate of fire, rds/min	250

7.62mm PECHENEG

Standard Machine Gun

Mission

The Pecheneg standard machine gun is designed to engage personnel and enemy weapon systems. It is a formidable weapon designed to provide fire support to motorised rifle units. It combines great firepower of a heavy machine gun and mobility of a light machine gun.

General description

The machine gun is a derivative of the worldwide famous PKM machine gun. Modernisation was aimed at increasing accuracy of fire, service life of parts, and improving operating capabilities of the weapon.

Basic specifications	
Cartridge	7.62x54
Muzzle velocity, m/s	825
Effective range of fire, m	1,500
Weight, kg:	
without box and belt	9.5
box with belt for 100/200 rounds	3.9/8
bipod	4.5
Length, mm	1,200
Belt capacity, rds	100 and 200
Rate of fire, rds/min	600-800

Pecheneg can fire all types of 7.62x54mm rounds. The weapon is fed from a 25- or 50-round disintegrating metal belt. Loaded belts are transported in boxes for 100 and 200 rounds each.

Pecheneg is gas operated. Its barrel is blocked by rotation of the breech. A striker-type trigger mechanism is activated by the breech block. It has a rear sear, and provides for automatic fire only. A safety catch blocks the trigger and sear when activated.

Special design of the barrel assembly allowed for reduction of non-removable barrel temperature warp, thus immensely increasing accuracy of fire. Ensuring high survivability, the non-removable barrel improves operating characteristics of the weapon. A handle for carrying the machine gun also plays the part of anti-mirage belt, thus decreasing aiming errors resulting from the haze when the barrel is heated.

An open-type sight includes a foresight and an adjustable sector-type backsight with a device for lateral adjustments. The machine gun mounts a standard attachment point for various optical and optronic sights.

Reliability of moving parts together with superb accuracy of fire and high survivability open vast prospects for the weapon.

7.62mm PKTM

Tank Machine Gun

Mission

The PKTM modernised Kalashnikov tank-mounted machine gun is designed to equip tanks, IFVs and APCs, adding firepower to the main armament.

General description

Mounted on special mounts, it can be used as a casemate machine gun in pillboxes. PKTM is derived from the PK-based PKT machine gun and features increased service life and greater technological effectiveness.

PKTM can fire all types of 7.62x54mm rounds. The machine gun is fed from a 25- or 50-round metal belt consisting of disintegrating links. Loaded belts are stored in boxes for 250 rounds each.

The machine gun is gas operated. In order to ensure reliable operation in various operating conditions, it is fitted with a gas regulator. Its barrel is blocked by rotation of the breech. A striker-type trigger mechanism is activated by the breech block. It has a rear sear, and provides for automatic fire only. A safety catch blocks the trigger and sear when activated. There is an electronic trigger on the backside of barrel chamber for remote fire control.

The massive barrel ensures intense fire in bursts. Field-stripping for clearing and oiling is possible without dismantling the weapon. Sighting is carried out by means of optical sights of combat vehicles' main armament.

Basic specifications	
Cartridge	7.62x54R
Muzzle velocity, m/s	825
Effective range of fire, m	2,000
Empty weight, kg	10.5
Length, mm	1,098
Capacity of belt in box, rds	250
Cyclic rate of fire, rds/min	650

12.7mm KORD

Heavy Machine Gun

Mission

The Kord heavy machine gun is designed to kill enemy personnel, light armoured materiel, weapons, and low-altitude air targets.

Features

Kord is a derivative of the NSV-12.7 Utyos large-calibre machine gun featuring better accuracy of fire and extended service life. Where its dimensions and combat position size are concerned, it is identical to its predecessor, which enables it to be employed on all mounts, developed earlier for the NSV-12.7 machine gun.

Design

The machine gun is gas-operated. Unlike NSV-12.7, which features wedge chambering with a horizontally sliding breech block, the Kord machine gun boasts chambering by a turning breech block which increased machine gun's reliability. There are two modifications of the machine gun with feed from the left or right. A striker-type firing mechanism is operated by the breech block carrier. A trigger with the rear sear allows the machine gun to fire only in automatic mode. It can fire single shots if the trigger is pulled for a short period of time, which requires some training. An anti-aircraft version of the machine gun, mounted on tanks, is equipped with an electric sear for remote fire control.

A quick-change barrel is manufactured by cold radial forging (reduction), which together with a new efficient muzzle break/flash elim-

inator increased accuracy of automatic fire by about 1.5 times. On the left side of the receiver there is a mount for an optical or an electro-optical sight. A mechanical open type sight is employed as an alternative.

Versions

The machine gun can be mounted on the 6T7 light infantry tripod for firing at ground targets, on the 6U6 versatile tripod for firing at both ground and air targets, and on a special mount for firing from pillboxes.

The Kord version (6P49) fitted with an electric sear is mounted on all types of tank AA machine gun mounts.

Basic specifications	
Cartridge	12.7x108
Muzzle velocity, m/s	820-860
Effective range of fire, m	2,000
Machine gun weight, kg	25.0
Length, mm	1,577
Cyclic rate of fire, rds/min	650-750

7.62mm SVD and SVDS

Sniper Rifles

Mission

The SVD self-loading Dragunov sniper rifle is the main weapon of snipers in the Russian Armed Forces. The rifle features ergonomic design. In terms of operating convenience it is comparable with sporting weapons.

Special sniper rounds were developed for this rifle. Besides, all types of 7.62x54mm rounds can be used if necessary.

General description

The rifle is gas-operated. Part of the exhaust gases is led from the bore to a gas-operated piston, which applies a light-weight pusher to the breechblock. There is a regulator in the gas chamber to ensure reliable operation of the weapon in adverse operating conditions (dust and mud). The barrel is blocked by rotation of the breech to three combat stops. A trigger mechanism is of a cock type. A safety catch blocks the sear and trigger when in firing position. Besides, the flag of the safety catch covers the cut in barrel chamber, preventing any dirt from getting inside, and blocking motion of the breechblock. The SVD rifle features high survivability and reliability.

SVD is equipped with the 4× PSO-1M2 optical sight, with an illuminated sighting mark and a screen for detecting IR sources. The sight is provided with a target range scale, as well as a range and a lateral adjustment input device. For firing at night, the optical sight can be replaced with a night one. A standard attachment point can mount various day and night sights. A mechanical sight comprises an adjustable foresight and a selector-type backsight.

The rifle is fed from a 10-round two-row box-type magazine. To make firing convenient when optical or optronic sights are used, the butt is equipped with a cheek piece on a spring catch. A complete set of the rifle can include a removable bipod.

The SVDS sniper rifle specially developed for airborne troops features a folding butt, a shorter barrel, and a new flash supressor. The total length of the rifle in transportation position is reduced to 875 mm, while its ballistic characteristics are practically the same.

Basic specifications

	SVD	SVDS
Cartridge	7.62x54	7.62x54
Muzzle velocity, m/s	830	810
Effective range of fire, m:		
with mechanical sight	1,200	1,200
with optical sight	1,300	1,300
Weight, with optical sight and empty magazine, kg	4.3	4.68
Length without bayonet, mm	1,220	1,135 875 (butt folded)
Magazine capacity, rds	10	10
Combat rate of fire, rds/min	30	30

12.7mm OSV-96

Sniper Rifle

Mission

The OSV-96 large-calibre self-loading sniper rifle is designed to engage a variety of targets, including protected personnel, soft-skinned targets, radars, missile launchers and artillery, parked aircraft, etc., as well as to control the border line, defend coasts against small-size craft and set off sea mines.

The rifle fires 12.7mm sniper rounds. If necessary, it can fire all 12.7x108mm rounds.

Features

OSV-96 is capable of engaging personnel at 1,200 m and materiel at up to 1,800 m. A bullet of the B-32 armour-piercing round has enough power to penetrate standard army body armour at the maximum range. Smaller ranges give the rifle anti-armour capability. A 12.7mm bullet is several times less dependent on the wind drift than a 7.62mm one.

The OSV-96 rifle can be used in anti-sniper role, as it allows the firer to stay out of effective range of common calibre small arms.

General description

The rifle is gas-operated. The barrel is blocked by rotation of the bolt. A manual cock-type trigger mechanism ensures single-shot fire. Considerable decrease in recoil is achieved through installation of an effective muzzle brake and a shock-absorbing butt-pad. Automatic reloading of the weapon reduces operator's fatigue, ensuring high rate of fire.

OSV-96 features a standard attachment point for various optical and optronic sights with large magnification capability. The rifle normally comes with a collimator optical sight. A special night sight gives the rifle a nocturnal effective range of up to 600 m. Convenience of aiming is achieved through use of a bipod and a well-balanced layout of rifle's elements.

The rifle is equipped with a folding stock for convenience of transportation in a canvas bag.

OSV-96 is in service with Russian special forces of the army and law enforcement bodies.

Basic specifications	
Calibre, mm	12.7
Cartridge	12.7mm with B-32, BZT, BS bullets
Muzzle velocity, m/s	820
Max optical effective range of fire, m	1,800
Empty weight without sight, kg	12.6
Dimensions, firing position with optical sight, mm	1,690x126x302
Dimensions, carrying position, mm	1,100x132x196
Magazine capacity, rds	5
Operation	single shot

9mm VSS

Special Sniper Rifle

Mission

The VSS special silent sniper rifle is used to destroy hostile personnel in flak jackets and in unarmoured vehicles. The weapon is to be used when noiseless and flameless firing is required. The VSS rifle is most efficient in urban and mountainous terrain.

Features

The rifle fires the 9x39mm SP.5 special sniper rounds at a subsonic muzzle velocity. If necessary, the 9x39mm SP.6 enhanced penetration rounds can be employed, too.

The weapon can be quickly field-stripped and assembled, which facilitates covert transportation.

A trigger mechanism provides single-shot and full-automatic fire. A selector switch is behind the trigger. The integrated noise suppressor greatly decreases velocity and temperature of powder gases. As a result, level of noise amounts to some 130 dB and equals that of the 22LR small-calibre sporting rifle.

The VSS sniper rifle can mount the 4× PSO-1-1 optical sight with illuminated cross-hairs. Rounds are fed from a 10-round detachable two-row box magazine which is interchangeble with a 20-round magazine organic to the AS and SR-3 assault rifles. For covert transportation it breaks up into three small parts.

Basic specifications	
Rounds	9x39mm SP.5 and SP.6
Muzzle velocity, m/s	290
Effective range of fire, m	400 (optical and open sights) 300 (night vision sight)
Rifle weight (without sight, with empty magazine), kg	2.6
PSO-1-1 sight weight, kg	0.58
Length, mm	894
Magazine capacity, rds	10

9mm AS

Special Assault Rifle

Mission

The AS special assault rifle is designed to destroy hostile soft-skinned vehicles and personnel wearing body armour. Special rounds, integrated silencer and automatics design ensure noiseless and flameless operation of the weapon. The assault rifle is fitted with a folding metal stock and is lightweight and small.

Basic specifications	
Cartridge, mm	9x39
Muzzle velocity, m/s	295
Effective range of fire, m	400
Empty weight, kg	2.5
Length, mm	875/615 (stock folded)
Magazine capacity, rds	20
Combat rate of fire, rds/min	up to 30 (single-shot) up to 90 (bursts)

Features

All moving parts are designed to cause minimum vibrations during firing. A trigger mechanism provides both single-shot and burst fire. A selector switch is placed behind trigger.

An open-type sight includes a foresight and an adjustable sector-type sight. The rifle can be fitted with various optical and electro-optical sights.

The AS rifle fires the 9x39mm SP.6 enhanced penetration round and the SP.5 sniper round. Rounds are fed from a 20-round magazine.

7.62x39mm

Assault Rifle Rounds

Mission

7.62x39mm rounds are designed for AKM-type assault rifles and their derivatives. There are several modifications of the round for various purposes.

General description

The 57-N-231 round with conventional bullet is designed to engage personnel and weapon systems. Its bullet has a steel core. The bullet tip has no distinguishing colour.

The 57-N-231P round with a tracer bullet is designed for fire adjustment and target designation. The bullet has a green tip.

Basic specifications		
Designation	57-N-231	57-N-231P
Calibre, mm	7.62x39	7.62x39
Weight, g:		
round	16.3	16.1
bullet	7.9	7.57
Round length, mm	56	56
Muzzle velocity, m/s	718	718
Accuracy of fire at 100 m (R_{50}), cm		
Max accuracy of fire at 300 m (R_{50}), cm	7.5	14
Penetration range, m:		
steel helmet	1,000	-
St3 6mm steel plate	300	-
6Zh85T body armour	60	-
Tracing range, m	-	800
Case material	steel or clad metal	clad metal

5.45x39mm

Assault Rifle Rounds

Mission

5.45x39mm rounds are designed for the AK74-type weapons and their derivatives. By now, several modifications of the round have been developed for various purposes.

General description

The 7N6 round with a conventional bullet is designed to kill personnel. The bullet has a steel core. Its tip has no distinguishing colour. A sealing lacquer belt on the mouth of the case is red-coloured.

The 7N10 round with an enhanced penetration bullet is designed to kill personnel wearing body armour. The core of the bullet is made of hardened steel. The bullet tip is uncoloured. A sealing lacquer belt on the mouth of the case is violet-coloured.

The 7T3 round with a tracer bullet is designed for fire adjustment and target designation. The bullet has a green tip.

The 7Kh3 blank round with a bullet imitator is designed to initiate shot sound. When this round is used, the barrel of the gun is fitted with a bushing to produce an exhaust gases pressure build-up for operation of moving parts, as well as breakup of imitator bullet. The latter is made of white plastic.

Basic specifications				
Designation	7N6	7N10	7T3	7Kh3
Calibre, mm	5.45x39	5.45x39	5.45x39	5.45x39
Weight, g:				
round	10.5	10.7	10.3	6.6
bullet	3.43	3.62	3.23	0.24
Round length, mm	57	57	57	57
Muzzle velocity, m/s	880	880	883	-
Accuracy of fire at 100 m (R_{50}), cm		max 3.5		-
Accuracy of fire at 300 m (R_{50}), cm	max 7.5		max 14	-
Penetration range, m:				
6mm St3 steel plate	300		-	-
16mm St3 steel plate	-	300	-	-
5mm armour plate	-	150	-	-
6Zh85T body armour	80	200	-	-
Tracing range, m	-	-	800	-
Case material	steel	steel	steel	steel

7.62x54mm

Rounds for Rifles and Machine Guns

Mission

7.62x54mm rounds are designed for associated machine guns and sniper rifles. Currently, there are several modifications of 7.62x54mm rounds for various purposes.

General description

The 57-N-323S round with a conventional steel-core bullet is designed to engage personnel and weapon systems. The bullet has a steel core. The tip has no distinguishing colour.

The 7N13 round with an enhanced penetration bullet is designed to kill personnel wearing body armour. Bullet features a heat-strengthened core. The tip is uncoloured. A sealing lacquer belt on the mouth of the case is red-coloured.

The 7T2 round with the T-46 tracer bullet is designed for fire adjustment and target designation. The bullet has a green tip.

The 7BZ-3 round with the B-32 armour-piercing/incendiary bullet is designed to defeat light armoured targets. The bullet has a black-red tip.

The 7N1 sniper round is designed to kill single targets from a sniper rifle. The tip of the bullet is uncoloured.

Basic specifications					
Designation	57-N-323S	7N13	T-46	B-32	7N1
Calibre, mm			7.62x54		
Weight, g:					
round	21.8	21.7	22	22.6	21.9
bullet	9.6	9.4	9.65	10.39	9.8
Round length, mm	77.1	77.1	77.1	77.1	77.1
Muzzle velocity, m/s	828	828	798	808	823
Max accuracy of fire at 300 m (R_{50}), cm	9	9	15	15	8
Penetration, m:					
6mm St3 steel plate	520	660	-	-	-
10mm armour plate	-	-	-	200	-
6Zh85T body armour	110	800	-	-	-
Tracing time, sec	-	-	3	-	-
Case material			clad metal		

5.56mm RS101 Round

with Enhanced Penetration Bullet

Basic specifications	
Weight, g:	
round	11.0
bullet	3.9
Bullet speed when fired from S-5.56 ballistic barrel, V_{25} m/s	920
Accuracy of fire at 200 m, R_{50} cm	max 6
Range of min 60% penetration when fired from AK101 against 16mm St3 steel plate, m	100

The 5.56mm RS101 round is designed to engage personnel wearing body-armour in open, as well as single and multiple targets and other materiel.

The round consists of a steel lacquered case, a cap, a gunpowder charge and a bullet. The bullet comprises a clad metal cover, a lead jacket and a treated steel core.

14.5x114mm

Large Calibre Rounds

14.5x114mm rounds are designed for the KPV, KPVT and SKP Vladimirov machine guns and ZPU-1, ZPU-2, ZU-2 and ZPU-4 anti-aircraft machine guns. There are several modifications of round designed for various purposes.

The B-32 round with an armour-piercing/incendiary bullet (57-BZ-561S) is designed to defeat light armoured targets, personnel and weapon systems behind light covers, as well as low-flying aircraft. The bullet has a black-red tip.

The BZT round with an armour-piercing/incendiary/tracer bullet (57-BZT-561S) and the BZT-M round with modernised armour-piercing/incendiary/tracer bullet (57-BZT-561SM) are designed for fire adjustment and target designation. These can also be used to set targets on fire. The bullet has a violet-red tip.

Basic specifications		
Designation	B-32	BZT-44 (BZT-44M)*
Calibre, mm	14.5x114	
Weight, g:		
round	191	185
bullet	63.9	60.5
Round length, mm	156	156
Muzzle velocity, m/s	988	995-1,005
Accuracy of fire at 300 m (R_{50}), cm	max 20	max 20
Penetration, m:		
20mm armour set at 20°	up to 300	100
Tracing range, m	-	2,200
Trace deviation from barrel end, m	-	50-120*
Case material	brass	steel

12.7x108mm

Large Calibre Rounds

Mission

12.7x108mm rounds are designed for the DShK, NSV (NSVT), Kord, A-12.7A heavy machine guns and OSV-96 and KSVK sniper rifles. There are several modifications of rounds for various purposes.

General description

The BS round with an armour-piercing/incendiary bullet (7BZ-1) is designed to engage light armoured targets, personnel and weapon systems behind light covers, as well as low-flying aircraft. It can also be used to set targets on fire. The bullet is painted red with a black tip.

The BZT-44 round with an armour-piercing/incendiary/tracer bullet (57-BZT-542) and the BZT-44M round with a modernised armour-piercing/incendiary/tracer bullet (57-BZT-542M) are designed for fire adjustment and target designation. They can be employed to set targets on fire. The bullet has a violet-red tip.

The B-32 round with an armour-piercing/incendiary bullet (57-BZ-542) is designed to defeat light armoured targets, personnel and weapon systems behind light covers, as well as low-flying targets. The bullet has a black-red tip.

The 1SL two-bullet round (index 9-A-4012) is designed to kill personnel, unarmoured vehicles and firing assets. It is fired from the YakB-12.7 high-rate-of-fire machine guns mounted on the Mi-24 gunships. The bullet has no distinguishing colour.

The 1SLT two-bullet round with a tracer bullet (9-A-4427) is designed for fire adjustment and target designation, as well as engagement of live targets, soft-skinned materiel and weapon systems. It is fired from the YakB-12.7 high-rate-of-fire machine guns mounted on the Mi-24 helicopters. The bullet has a green tip.

The 7Kh1 blank round is designed to imitate shot sound. A special blank firing system consisting of a muzzle attachment cap and special inserts in the machine gun receiver and round case is used to fire the rounds.

The 7Kh2 drill round is designed to train personnel to charge belts and load weapons. The bullet has no distinguishing colour. In order to distinguish between drill and live rounds, cases of the former have longitudinal extrusions. The bullet firmly sits in the case due to additional reduction of the case mouth.

Basic specifications

Designation	BS	BZT-44 (BZT-44M)*	B-32	1SL	1SLT	7Kh1	7Kh2
Calibre, mm	12.7x108						
Weight, g:							
round	141	128	133.5	145	142	80.1	115
first/second bullet	55.4	44	48.2	31/27	31/27	-	47
Round length, mm	147	147	147	147	147	112	147
First/second bullet muzzle velocity, m/s	818	818	818	735/680	730/700		
Accuracy of fire at 300 m (R_{50}), cm	max 19	max 19	max 20	max 50	max 50		
Penetration, m:							
15mm armour	up to 100						
20mm armour set at 20°	up to 750		up to 100				
Tracing time, sec	-	min 3	-		min 2.9		
Tracing range, m	-		-		1,000		
Trace deviation from barrel end, m	-	50-120*	-				
Case material	brass						

9x18mm

Pistol Rounds

Mission

The 9x18mm round is designed for associated pistols and sub-machine guns. There are several modifications of rounds for various purposes.

General description

The 57-N-181S round with steel-core bullet is designed to kill personnel at a range of up to 50 m. The bullet has a clad metal envelope totally covering the core. The bullet's nose is spherical with no distinguishing color of the tip.

The RG028 round with enhanced penetration bullet is designed to kill personnel wearing body armour. The bullet has a core of hardened steel.

The SP-7 round with an enhanced stopping effect bullet is designed to defeat live targets. The bullet has a black tip.

The SP-8 round with a low-penetration bullet is designed to engage personnel.

Basic specifications				
Designation	57-N-181S	RG028	SP-7	SP-8
Calibre, mm	9x18	9x18	9x18	9x18
Weight, g:				
round	10	11	8	8.5
bullet	6	6	6	5
Round length, mm	25	25	25	25
Muzzle velocity, m/s	298	325	420	250
Accuracy of fire at 25 m (R_{50}), cm	3.2	3.2		3.2
Penetration, m:				
1.3mm St3 steel plate	20			
5mm steel plate	20			
Case material	clad metal			

1PN51 (NSPU-3)

Night Sight

Mission

The 1PN51 passive night sight is intended for observation and accurate sighting of hostile personnel at night, when terrain is illuminated with starlight or the moon. The sight can be fitted on all types of small arms equipped with a special side-mounted bracket.

Features

A second-generation electro-optical converter is designed to detect hostile targets and provide for high-accuracy fire at tank-type targets at ranges of up to 600 m, and soldier-type targets at ranges of up to 400 m. The sight boasts high level of light interference protection. The cross hairs are illuminated, and brightness is gradually adjusted.

A special diaphragm is to be applied if brightness is too high.

The sight can be efficiently employed within the temperature range of ± 50 ºC.

Basic specifications	
Optical magnification, power	3.46
Field of view, deg	9°35′
Exit pupil distance, mm	50
Power supply, V	6.25
Continuous operation with one battery, hrs	40
Weight with battery, kg	2.1
Weight of set in carrying position, kg	6.45
Dimensions, mm	276x140x210
Weapon types	assault rifles, machine guns, sniper rifles

1PN52

Night Sight

Mission

The 1PN52 passive night sight is used for observation and accurate engagement of hostile personnel at night, when terrain is illuminated with starlight or the moon. The sight can be fitted on SPG-9 (1PN52) anti-tank gun and Kord (1PN52-1) large-calibre machine guns.

Features

A second-generation electro-optical converter is designed to detect hostile targets and provide for fire with high accuracy against tank-type targets at ranges of up to 700 m. The sight boasts high level of light interference protection. Its cross hairs are illuminated, and brightness is gradually adjusted.

A special diaphragm is to be applied if brightness is too high.

The sight can be efficiently employed within the temperature range of ± 50 ºC.

Basic specifications	
Generation of the converter	2nd
Optical magnification, power	5.3
Angular field of vision, deg	7.6
Detection range, m	700 (tank)
Power supply, V	6.25
Continuous operation with one battery, hrs	40
Weight, kg	3.2
Dimensions, mm	310x163x186
Weapon types	anti-tank missile launchers, large-calibre machine guns

1PN93 (1PN93-1, 1PN93-2, 1PN93-3, 1PN93-4, 1PN93-5)

Night Sights

Mission

The 1PN93 passive night sights are designed to provide observation of and precision fire against enemy personnel at night, when terrain is illuminated with starlight or the moon. The 1PN93-series sights can be mounted on all types of small arms and rocket launchers equipped with a special side bracket.

General description

The 1PN93-1 sight is mounted on the AK74M (AN-94) assault rifles and VSS sniper rifles (AS assault rifles); 1PN93-2s are fitted on the AK74M (AN-94) assault rifles and RPG-7V/RPG-29 rocket launchers. The 1PN93-3 sights are designed for the PKM machine guns and SVD sniper rifles.

The 1PN93-1, 1PN93-2 and 1PN93-3 sights feature the 2+ generation electro-optical converters used to detect and fire with high accuracy at soldier-type targets at ranges from 350 to 500 m.

The 1PN93-4 sight is mounted on the SVD sniper rifles; the 1PN93-5 day and night sights are mounted on the AK74M and AK103 assault rifles, the SVD sniper rifles and RPG-7V anti-tank rocket launchers.

Third-generation electro-optical converters of the 1PN93-4 and 1PN93-5 sights enable operators to engage soldier-type targets at ranges of up to 600 m.

All sights of the 1PN93 series boast a high level of light interference protection. The cross hairs are illuminated, and brightness can be gradually adjusted.

The sight can be efficiently employed within the temperature range of ± 50 ºC.

Basic specifications

Designation	1PN93-1	1PN93-2	1PN93-3	1PN93-4	1PN93-5
Converter generation	2+	2+	2+	3	3
Optical magnification, power	4	4	5	3.7	4
Angular field of vision, deg	7	7	5	10	9
Soldier detection range, m	350	400	500	600	600
Power supply	1.5 V 1 AA-type battery	1.5 V 1 AA-type battery	1.5 V 1 AA-type battery	1.5 V 1 AA-type battery	2.35 V 2 AA-type batteries
Continuous operation with one battery, hrs	10	10	10	10	10
Weight, kg	0.9	1.2	1.3	1.3	1.8
Dimensions, mm	207x79x176	220x90x193	226x100x198	250x81x190	308x95x190

LAND FORCES WEAPONS

SPECIAL WEAPONS

4.5mm SPP-1M

Special Underwater Pistol

Mission

The SPP-1M underwater pistol is designed to arm combat divers. The weapon is effective at ranges of up to 17 m underwater, depending on a diving depth, and of up to 20 m in the air.

Features

The pistol fires the 4.5mm SPS rounds with steel bullets.

The weapon is non-automatic, four-barrel, smooth-bore. The barrels are fired in succession. A trigger-type mechanism is a hammer-action, self-loading one. The weapon is cocked by pulling the trigger. Firing is possible with the use of the hammer only.

To load and unload the pistol, the breech block is to be turned upwards, the way hunting rifles are operated. Four rounds in a clip are simultaneously put into the barrels.

Operational safety of the pistol is ensured by a safety catch used to block the trigger and hammer.

A sighting system comprises a fixed foresight and a backsight.

A complete set of the SPP-1 pistol includes ten cartridge clips, a holster, a device for loading the SPS cartridges into clips, a special sling for carrying the pistol, and three metal containers for loaded clips.

Special coating is applied to protect the pistol in sea water.

Basic specifications	
Cartridge	SPS
Muzzle velocity in air, m/s	250
Effective range of fire under water, m:	
at 5 m	17
at 10 m	14
at 20 m	11
in air	20
Empty weight, kg	0.95
Length, mm	244
Ammunition load, rds	16 in clips

5.66mm APS

Special Underwater Assault Rifle

Mission

The APS assault rifle is used for arming combat swimmers and their underwater transportation means. It is designed to kill enemy personnel underwater at a range of up to 30 m (depending on the depth), provide self-defence at a range of up to 100 m on the ground, as well as protect swimmer from predators in water. When underwater, swimmer can fire from all positions, at surface targets as well.

Features

The assault rifle fires the 5.66mm MPS rounds with steel bullets.

The APS rifle is gas-operated. The gas chamber features a lever for changing the amount of gases, which ensures stable operation of the weapon both under water and in the air.

The trigger mechanism is of a striker type. It ensures single-shot and full-automatic fire. The assembly is operated by a recoil spring. A selector lever, which is also a safety catch, is located on the right side of the barrel chamber.

A sight comprises a fixed foresight and a backsight. The assault rifle is fed from a 26-round detachable magazine. A pull-out butt is retracted into the barrel chamber. Special coating protects the rifle in sea water.

Primary specifications	
Cartridge	MPS, MPST
Muzzle velocity in the air, m/s	365
Effective range of fire, m:	
under water	
at 5 m	30
at 20 m	20
at 40 m	10
in air	100
Cyclic rate of fire, rds/min	600
Empty weight, kg	3.4
Length, mm	823/615 (butt folded)
Magazine capacity, rds	26

45mm DP-64

Portable Anti-Saboteur Grenade Launcher

Mission

The DP-64 portable anti-saboteur grenade launcher is designed for arming crew members of a variety of vessels, as well as forces guarding ports and ship anchorage sites.

Features

The weapon is used for engaging underwater saboteurs at ranges of up to 400 m and depth of up to 40 m. Good combat characteristics, simplicity of design and operational reliability of the grenade launcher add to its efficiency.

The DP-64 launches the SG-45 signal and FG-45 HE depth charges. The signal grenade, used to spot a swimmer, burns on water surface for 50 seconds glowing with bright red light. The HE grenade is designed to defeat underwater swimmers with a shock wave. Its fuse is set for detonation depth before loading. Underwater shock wave, generated by the grenade, kills live targets within the range of 14 m.

General description

The grenade launcher is fitted with two vertical barrels used in succession. The barrels are selected by turning a lever accommodated above the trigger guard. The weapon is breech-loaded, with the bolt pulled backward and turned for the purpose. The butt is fitted with a springy rubber pad used to diminish recoil. A mechanical sighting system enables launching grenades along flat and curved trajectories. The weapon can be used from any section of a ship, including hatches and portholes.

The grenade launcher is in service with the Russian Armed Forces.

Basic specifications	
Calibre, mm	45
Rounds	signal and HE
Range of aimed fire, m	400
Killing depth, HE grenade, m	up to 40
Burning time, signal grenade, sec	up to 50
Weight, kg:	
grenade launcher	10
grenade	0.65
Number of preset depths	2

9mm VSK-94

Sniper Rifle

Mission

The VSK-94 special-purpose silent sniper rifle is designed to engage hostile personnel in flak jackets or inside vehicles when carrying out special operations ruling out noise and muzzle flashes. It is highly effective in urban warfare.

Features

The weapon has been chambered for the 9x39mm SP-5 sniper rounds fired at a subsonic muzzle velocity. If necessary, the 9x39mm SP-6 or PAB-9 enhanced penetration rounds can be employed, too.

The trigger mechanism provides single-shot and full automatic fire. A selector, which is also a safety catch, is above the trigger guard.

VSK-94 can be quickly field-stripped and assembled, which ensures covert transportation.

A silencer is screwed onto the muzzle section of the barrel reducing noise level and eliminating flash. No maintenance is required for the silencer during operational life of the rifle. Shot noise level equals that of a sports .22LR small-calibre rifle.

The VSK-94 sniper rifle can mount the 4^{x} PSO-1-1 optical sight with illuminated crosshairs. The sight has a range-finder scale, and a range and lateral adjustment input device. A standard mount on the left side of the receiver can be used for fitting the rifle with various night or day sights. A mechanical sighting unit comprising adjustable foresight and a flip sight is used as a fall-back device.

Rounds are fed from a detachable two-row, 20-round box magazine interchangeable with that of the 9A-91 assault rifle.

The VSK-94 rifle is used by the Russian Special Forces.

Basic specifications	
Cartridge	9x39mm SP-5, SP-6, PAB-9
Muzzle velocity, m/s	290
Effective range of fire, m:	
optical and open sights	400
night sight	300
Weight, kg:	
empty, without sight	2.9
PSO-1-1 sight	0.58
Length, mm	900
Magazine capacity, rds	20

9mm 9A-91

Compact Assault Rifle

Mission

The 9A-91 compact assault rifle is designed to engage enemy personnel wearing body armour, and to destroy non-armoured vehicles at a range of up to 200 m.

Features

While the rifle's weight and dimensions are comparable to those of modern sub-machine guns, the weapon surpasses them in effective range of fire and lethality of rounds. Special-purpose rounds are fitted with low-ricochet bullets increasing rifle's efficiency in close-quarter combat.

The assault rifle fires the SP-5, SP-6 and PAB-9 rounds; these are fed from a 20-round magazine commonised with that of the VSK-94 rifle.

A metal butt is folded upwards. The sight is an open-type device that can be employed with the butt folded. The assault rifle can mount various optical, and electro-optical sights. It can also be fitted with a detachable silencer and a laser target designator.

Basic specifications	
Cartridge	9x39mm SP-5, SP-6, PAB-9
Muzzle velocity, m/s	270
Effective range of fire, m	200
Empty weight, kg	appr. 2
Length, mm	605/383 (butt folded)
Magazine capacity, rds	20
Combat rate of fire, rds/min	up to 30 (single shots), up to 90 (bursts)

9mm SR-3

Compact Assault Rifle

Mission

The SR-3 compact assault rifle is designed to engage personnel in body armour and unarmoured vehicles at a range of up to 200 m.

Features

The SP-6 round fired by SR-3 is a 9x39mm armour-piercing cartridge capable of penetrating body armour containing two 1.4mm titanium plates and 30 layers of Kevlar, preserving its lethality after that. Special cartridges with low ricochet capability make the weapon efficient in close-quarter combat.

The weapon fires the SP-6 cartridges, fed from 10- or 20-round magazines standardised with those of the VSS rifle and AS assault rifle.

A metal butt is folded upwards onto the barrel chamber. The assault rifle features an open type sight, which can be set for firing at 100 and 200 m, and used with the butt folded.

Basic specifications	
Cartridge	9x39mm SP-6
Muzzle velocity, m/s	290
Effective range of fire, m	200
Empty weight, kg	2.1 (with 20-round magazine)
Length, mm	640/396 (butt folded)
Magazine capacity, rds	10 or 20
Combat rate of fire, rds/min	up to 30 (single shots), up to 90 (bursts)

9mm OTs-02 (TKB-0217) KIPARIS

Sub-Machine Gun

Mission

The OTs-02 Kiparis is a light sub-machine gun. The weapon fires the 9x18mm PM rounds. Light weight and small size of the weapon enhance its efficiency in close-quarter combat.

Features

The OTs-02 Kiparis is a bolt-action gun of conventional design, with the magazine accommodated in front of the trigger guard. Automatic system of the asset has considerably improved its operational stability and accuracy of fire when firing bursts.

A trigger assembly enables employment of the sub-machine gun both in the single-shot and full automatic mode. An open-type sight system comprises a foresight and a flipsight. A folding butt is designed to provide maximum comfort to user and ensure stability of the weapon. Rounds are fed from a two-row, 20- or 30-round box magazine.

Basic specifications	
Cartridge	9x18mm PM
Muzzle velocity, m/s	320
Effective range of fire, m	75
Empty weight, kg	1.57
Length, mm	590/316 (butt folded)
Magazine capacity, rds	20 and 30
Combat rate of fire, rds/min	up to 40 (single shots) up to 100 (bursts)

9mm PP-90M1

Sub-Machine Gun

Mission

The new Russian PP-90M1 sub-machine gun chambered for the associated 9x19 Para round is designed for arming combat support units and special units of law-enforcement agencies.

Features

PP-90M1 is a recoil-operated weapon. Its trigger mechanism allows for both single-shot and full-automatic fire. A selector/safety lever is placed on the barrel chamber above the pistol grip. Relatively low rate of fire and absence of recoil improve accuracy of automatic fire.

Design of the weapon allows for using two different magazines, if necessary, i.e. a 32-round box-type or a 64-round helical (or rotor-type) magazine. A metal butt can be folded upwards.

Made of high-strength plastics, the sub-machine gun boasts small weight with high corrosion-resistance capability.

Basic specifications	
Cartridge	9x19 Para, 9x19 PBP
Effective range of fire, m	200
Empty weight, kg	1.173
Length, mm	635/424 (butt folded)
Magazine capacity, rds	32 (box-type), 64 (helical)
Combat rate of fire, rds/min	up to 40 (single shots), up to 100 (bursts)

9mm PP-93

Sub-Machine Gun

Mission

The light-weight and compact PP-93 sub-machine gun is designed for arming special operations forces. PP-93 production features cutting-edge cold pressing technology.

Features

PP-93 is recoil-operated. The trigger mechanism allows for both single-shot and full-automatic fire. A selector/safety lever is on the left side of the barrel chamber. The grip of the breech remains unmoved during firing.

An open-type sight comprises a fixed backsight and a foresight. A metal butt which folds upwards ensures considerable increase in stability of weapon when in the automatic mode of fire. PP-93 is fed from a two-row 20- or 30-round box-type magazine. PP-93 can be equipped with a silencer and a laser target designator.

Basic specifications	
Cartridge	9x18 PM
Muzzle velocity, m/s	315
Effective range of fire, m	up to 100
Empty weight, kg	1.7
Length, mm	566/325 (butt folded)
Magazine capacity, rds	20 and 30
Combat rate of fire, rds/min	up to 40 (single shots), up to 100 (bursts)

9mm AEK-919K KASHTAN

Sub-Machine Gun

Mission

The light-weight and small-size AEK-919K Kashtan sub-machine gun is designed for arming special operations forces of the Interior Ministry and for self-defence.

Features

The sub-machine gun is a bolt-action one. The bolt telescopes over the chamber end of the barrel to reduce overall length of the weapon. A trigger mechanism is employed to fire both single shots and bursts. A cocking handle also used as a selector lever is located on the left side of the receiver.

A sighting system is an open type device. A flip-type notch rear sight is graduated at 50 m or 100 m. A metal extendable butt is fitted with an adjustable butt plate used to increase stability of the weapon in combat. Rounds are fed from a 20- or 30-round box magazine.

If necessary, the sub-machine gun can be fitted with a suppressor, a laser target designator and a collimating sight. Cutting-edge technologies are employed for producing Kashtan. The receiver is cold stamped, while the barrel has polygonal rifling. The trigger assembly and pistol grip are made of hard-stress polymers.

Kashtan has passed official trials carried out in accordance with requirements of the Russian Ministry of Defence.

Basic specifications	
Cartridge	9x18 PM
Muzzle velocity, m/s	315
Effective range of fire, m	100
Empty weight, kg	1.68
Length, mm	485/325 (butt folded)
Magazine capacity, rds	20 and 30
Combat rate of fire, rds/min	up to 40 (single-shot), up to 100 (bursts)

9mm PP-19 BIZON-2

Sub-Machine Gun

Mission

The PP-19 Bizon-2 sub-machine gun is a heavy machine gun with a high-capacity magazine. The weapon has been designed for assault operations in urban warfare. Principal elements of PP-19 are by 60 per cent standardised with those of Kalashnikov assault rifle, the world's most popular weapon.

Features

The PP-19 gun is a blow-back operated weapon. The trigger mechanism enables employment of the weapon in both single-shot and burst modes. An open-type sighting system consists of an adjustable foresight and a backsight. Optical and electro-optical sights are optional. Rounds are fed from a 64-round helical magazine. The PP-19 sub-machine gun can also be fitted with a noise suppressor.

Another version designated as Bizon-2-01 has been derived from the Bizon-2 sub-machine gun.

Basic specifications

	Bizon-2	Bizon-2-01
Cartridge	9x18 PM PMM, PBM	9x19 Para
Muzzle velocity, m/s	340 (PM), 460 (PMM)	380
Effective range of fire, m	100 (PM), 150 (PMM)	200
Empty weight, kg	2.7	3.0
Length, mm	690/460 (butt folded)	
Magazine capacity, rds	64	53
Combat rate of fire, rds/min	up to 40 (single-shot), up to 100 (bursts)	

9mm PP-91 KEDR and PP-9 KLIN

Sub-Machine Guns

Mission

The PP-91 Kedr is a light-weight sub-machine gun, and is one of the world's most compact assets of the type. PP-91 fires the 9x18mm PM rounds. Bullets do not ricochet when employed in built-up areas. Light weight and small size enhance weapon's efficiency in close-quarter combat.

General description

PP-9 is a bolt-action weapon of a conventional design with the magazine accommodated in front of the trigger guard. Firing is performed from the front sear; a trigger mechanism enables employment of the sub-machine gun both in the single-shot and burst modes. A hammer unit is a trigger-type device, which considerably increases accuracy of single shots. A safety catch is used to block the trigger and slide; in this position the lever of the catch is accommodated in the opening of the trigger guard, which can be determined by touch.

An open-type sighting system comprises a foresight and a flip sight. A folding butt is designed to provide maximum comfort to its user when firing at maximum ranges. Rounds fed from a 20- or 30-round two-row box magazine are accommodated chequerwise. When magazine is empty, the slide is retained in the rear position.

The PP-9 Klin sub-machine gun with a barrel noise/flame suppressor has been derived from PP-91. The chamber of the PP-9 gun has a special design used to delay extraction of used cartridges. It enables employment of both the 9x18mm PM and 9x18mm high-impulse PMM rounds. Its effective range is increased up to 150 m when new rounds are used.

The Kedr and Klin sub-machine guns are in service with the Russian Ministry of Internal Affairs.

Basic specifications

	PP-91 Kedr	PP-9 Klin
Cartridge	9x18 PM	9x18 PM, PMM
Muzzle velocity, m/s	310	310 (PM), 420 (PMM)
Effective range of fire, m	50	150
Empty weight, kg	1.54	1.54
Length, mm	539/305 (butt folded)	539/305 (butt folded)
Magazine capacity, rds	20 and 30	20 and 30
Combat rate of fire, rds/min	up to 40 (single-shot), up to 100 (bursts)	up to 40 (single-shot), up to 100 (bursts)

9mm SR-2

Sub-Machine Gun

Mission

Combat and maintenance characteristics of the SR-2 sub-machine gun meet requirements of the Personal Defence Weapon programme. It is capable of killing personnel wearing body armour at a range of up to 200 m, as well as destroying unarmoured vehicles at a range of up to 100 m. SR-2 fires several types of 9x21mm rounds, including the SP-10 enhanced penetration round, and SP-11 round with a lead core. Penetration capability of bullets is 2.5-5 times higher than that of 9x19mm Para.

Small dimensions of SR-2, together with the original armpit holster ensure comfortable and covert carrying of gun and short combat readiness time.

Basic specifications	
Cartridge, mm	9x21
Effective range of fire, m	200
Empty weight, kg	1.65
Length, mm	603/367 (butt folded)
Magazine capacity, rds	20 and 30
Combat rate of fire, rds/min	up to 40 (single shots), up to 100 (bursts)

General description

SR-2 is gas-operated with blocking of the barrel by rotation of the breech. A trigger mechanism is of a striker type, providing for single-shot and full-automatic fire. A flag-type safety catch is on the right side of the barrel chamber, while a selector lever is on the left side. Reloading handle is folded when on the move for convenient carrying.

A sight consists of a backsight and a two-position foresight, designed for effective aiming at 100 and 200 m. A top-of-barrel chamber features a bracket for mounting a collimator sight.

The sub-machine gun is fed from a 20- or 30-round two-row inserted magazine. A folding metal butt is in one line with the barrel axis when firing to decrease flipping of the barrel. It is folded upwards when on the move and fixed.

The sub-machine gun is in the inventory of the Russian Armed Forces.

9mm SR-1

Self-Loading Pistol

General description

For the time being, the SR-1 pistol makes one of the most formidable pistols in the world. In terms of lethality, a 9x21 armour-piercing round is 2.5-5 times more lethal than a 9x19 Para one. The new 9x21 SP-10 round ensures reliable engagement of personnel by penetrating a flak jacket or a steel helmet at ranges of up to 100 m.

Features

Automatic safety catches provide short readiness time of fire. To open fire, it is enough to take a grip and pull the trigger. All parts of the pistol are streamlined to eliminate chances of pistol catching outfit when being pulled out. The proven design, powerful round and large-capacity magazine make the pistol very reliable and effective. Despite employment of a powerful round, firing is quite convenient.

Design

The pistol has a short barrel moving along its axis. Blocking of the barrel when firing is provided by a special design feature, so-called "barrel blocker", which rotates vertically on the breech's way back to separate the breech from the barrel. A trigger mechanism ensures double action capability with preliminary cocking. Protection from accidental shot is provided by two safety catches. One is placed on the rear part of the grip to block the sear. The other is on the trigger. There is a version with a button-clip of the magazine, which can be set on both sides.

The pistol has a frame of high-strength plastics with a decreased weight and production cost.

Basic specifications	
Cartridge	9x21 SP-10, SP-11
Muzzle velocity, m/s	400 (SP-11), 450 (SP-10)
Effective range of fire, m	100
Empty weight, kg	0.9
Dimensions, mm	200x145x34
Magazine capacity, rds	18
Combat rate of fire, rds/min	36

9mm OTs-27 BERDYSH

Self-Loading Pistol

Mission

The OTs-27 Berdysh self-loading pistol is used by Russian law-enforcement bodies.

Features

Design of the weapon allows it to employ both standard 9x18 PM rounds and upgraded 9x18 PMM rounds. In addition to that, the pistol can be converted to fire the 7.62x25mm TT and 9x19mm Para ammunition by replacing the barrel and magazine.

White inserts are accommodated on a foresight and a backsight to facilitate operation at night.

The pistol features an increased-capacity magazine. Magazine release buttons are accommodated on both sides of the grip in its middle section.

The OTs-27 is a bolt-action weapon. A trigger-type assembly has a double-action design. Position of the extractor indicates presence of rounds in chamber. The pistol is fitted with a two-position selector lever on each side of a slide that is also used as a safety catch. Design of the catch was tailored to facilitate safe release of the trigger.

The pistol can be fitted with a laser target designator and a suppressor.

Basic specifications	
Cartridge	9x18 PM and PMM, 9x19 Para
Muzzle velocity, m/s	325 (PM), 425 (PMM)
Effective range of fire, m	50
Empty weight, kg	0.93
Dimensions, mm	200x143x35
Magazine capacity, rds	18
Combat rate of fire, rds/min	36

9mm OTs-33 PERNACH

Automatic Pistol

Mission

The OTs-33 Pernach automatic pistol is designed to engage personnel at a range of up to 100 m.

Basic specifications	
Cartridge	9x18 PM, PMM, PBM
Muzzle velocity, m/s	325 (PM), 425 (PMM)
Effective range of fire, m	100
Weight (without butt, with empty magazine), kg:	
18 rounds	1.15
27 rounds	1.18
Butt weight, kg	0.27
Length without butt, mm	222
Magazine capacity, rds	18 or 27
Dimensions, with 18-round magazine, mm:	
w/o butt	222x143x36.5
with butt	538x143x36.5
Modes of fire	single-shot, full-automatic
Combat rate of fire, rds/min	up to 60

Features

It is equipped with a detachable folding butt-stock and magazines with a capacity of either 18 or 27 rounds. The pistol fires the 9x18mm PM, PMM, and PBM ammunition.

A gas muzzle-brake provides the weapon with high accuracy of fire both in the single-shot and automatic modes of fire from both hands or using a butt-stock.

A backsight and a foresight have white plugs to facilitate aiming at night. The magazine catch is placed on both sides of the trigger.

A trigger mechanism is dual action, hammer-type. Extractor is also a loaded chamber indicator. A safety/fire selector switch is provided on each side of the pistol. It has three positions - "locked", "single-shot" and "full-automatic".

The pistol can be fitted with a laser target designator and a suppressor.

9mm GSh-18

Pistol

Mission

The GSh-18 pistol is a new generation side arm that has accumulated the latest achievements in developing and producing weapons of this class.

The pistol is designed for close combat.

Formidable munitions and capacious two-row magazine make pistol increasingly reliable and efficient.

Features

An automatic safety catch ensures safety while at the same time guarantees high level of combat readiness. Accuracy of fire stems from good ergonomic characteristics.

An adjustable magazine-hold button allows firing from either hand.

Plastic elements of the frame make the pistol light-weight and guarantee long service life.

Provisions are made for fitting a laser target designator.

Basic specifications	
Calibre, mm	9
Cartridge	9x19 Para, PBP
Armour piercing bullet muzzle velocity, m/s	535–570
Empty weight, kg	0.48
Empty magazine weight, kg	0.09
Magazine capacity, rds	18
Dimensions, mm	183x133x33

7.62mm PSS

Self-Loading Special Pistol

Features

For firing at night the foresight and backsight are provided with illuminating capsules.

The pistol is recoil-operated. A double action trigger mechanism was copied from the 9mm PM pistol to ensure short reaction time. A safety catch blocks the striker, bolt and trigger, and allows for safe trigger motion.

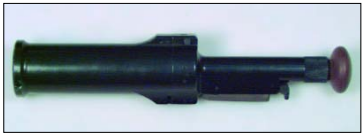
Mission

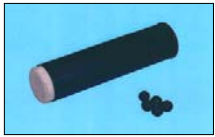
The PSS pistol arms Special Operations Forces and, therefore, is designed for attack and self-defence at short ranges when noiseless and flameless fire is vital. To this end the 7.62x42mm SP-4 round, which conceals exhaust gases in the case, is used for firing. Shooting is virtually noiseless. Absence of a silencer makes the pistol very compact, and thus convenient for covert transportation and always keeps it ready for use.

Basic specifications	
Cartridge	7.62x41,5 SP-4
Muzzle velocity, m/s	200
Effective range of fire, m	50
Empty weight, kg	0.7
Length, mm	165
Magazine capacity, rds	6
Combat rate of fire, rds/min	24

US-50

Small-Size Firing Device





The US-50 small-size firing device is designed to fire the EG-50M rounds with a grenade stuffed with rubber buck-shots. The device features one-hand firing capability.

Basic specifications	
Calibre, mm	50
Empty weight, kg	1.5
Dimensions, mm	406x84x64
Effective range of fire, m	up to 10
Rubber buck-shots search footprint on ground at a range of 5 m, m	1.5

NRS-2

Scouting Knife

Mission

The NRS-2 scouting knife is a combined sidearm of special scout units. The knife is designed to attack enemy in close-quarter combat with blade when stabbing or casting; it can also fire silently and without flash at a range of up to 25 m.

Featurtes

The NRS-2 has a single-shot firearm integrated in its handle. The barrel is in the back of the handle. The muzzle in the butt end is covered with a split rubber plug. The knife is aimed with the help of a notch in the cross-piece and a foresight.

A blade of the knife is made of high-strength steel, and has black chromium coating. The butt end of the blade features saw teeth for sawing metal bars of up to 10 mm in diameter. The handle is made of plastic, as is the scabbard, which mounts the handle of pliers capable of cutting a double core steel wire of 2.5 mm in diameter under the voltage of 380 V, or a telephone cable of 5 mm in diameter. Also, there are lunes in the handle of pliers to squeeze blasting caps. The front end of the scabbard features a flat screwdriver.

Basic specifications	
Cartridge	SP-4
Muzzle velocity, m/s	200
Effective range of fire, m	25
Weight with scabbard, g	570
Dimensions with scabbard, mm	330x64x32.5
Combat rate of fire, rds/min	2

9x19mm

Pistol Rounds

Russian 9x19mm rounds have NATO standard pistol round dimensions. They are designed for pistols and sub-machine guns. There are several modifications of the rounds for various missions.

The 7N21 armour-piercing round is designed for the PYa Yarygin pistol. It can engage personnel at up to 200 m, including Class 2 body armour-protected personnel at ranges of up to 50 m. The bullet has a treated steel core with the nose part protruding from the cover. The bullet has a black tip.

The PBP armour-piercing round is designed for the GSh-18 pistol. It can engage personnel wearing body armour. The bullet has a core of treated steel, with the nose part protruding from the cover. The bullet has no colour.

Basic specifications		
Designation	7N21	PBP
Calibre	9x19	
Weight, g:		
round	9.5	8.1
bullet	5.2	4.1
Round length, mm	29.7	29.7
Muzzle velocity, m/s	460	600
Accuracy of fire at 25 m (R_{50}), cm	2.5	
Penetration range, m:		
body armour	40	
8mm steel plate		10
Case material	clad metal	

9x21mm

Pistol Rounds

9x21mm rounds are designed for the SR-1 pistol and SR-2 sub-machine gun. There are two modifications of the rounds for different missions.

The SP-10 round with an enhanced penetration bullet is designed to engage personnel at ranges of up to 200 m, including Class 2 body armour-protected personnel at ranges of up to 50 m. The bullet has a core of treated steel. The bullet's tip is coloured black.

The SP-11 round with a common core bullet is designed to engage unprotected personnel at ranges of up to 200 m, and can also be used for training. The bullet has no distinguishing colour.

Basic specifications		
Designation	SP-10	SP-11
Calibre	9x21	9x21
Weight, g:		
round	11	12
bullet	6.7	7.5
Round length, mm	33	33
Muzzle velocity, m/s	420	380-400
Accuracy of fire at 25 m (R_{50}), cm	3.0	3.0
Penetration range, m:		
body armour	100	-
Case material	steel	clad metal

SP-4, SP-5, SP-6 and PAB-9

Special Cartridges

SP-5, SP-6 and PAB-9 special rounds

The 9x39mm SP-5, SP-6 and PAB-9 rounds are used with the VSS and VSK-94 sniper rifles, AS and OTs-14 Groza special assault rifles, as well as SR-3 and 9A-91 small-size assault rifles.

The SP-5 sniper round is designed to engage separate soft targets when fired from a sniper rifle. The bullet incorporates a steel core and a lead core, placed together into a single clad metal envelope. The SP-5 rounds do not feature distinguishing colour on their bullets.

The SP-6 and PAB-9 enhanced penetration rounds are designed to engage personnel wearing body armour, hiding in automobiles or behind thin covers. Bullets of these rounds have their steel core and jacket placed into a clad metal envelope. The nose of the core protrudes from the envelope. Tips of bullets are painted black.

SP-4 special cartridge

The SP-4 special cartridge, containing exhaust gases within the case, is designed for noiseless and flameless firing from the PSS special silent pistol and NRS-2 scouting knife. The bullet is fully concealed within the cartridge case. The bullet is a cylindrical alloy steel slug with a copper-driving band on the lead edge. There is a dimpled steel disc at its base, which acts as a piston. After the cartridge is fired, the piston strikes a case neck, retaining exhaust gases inside the case. The cartridge has no distinguishing colour.

Basic specifications				
Designation	SP-4	SP-5	SP-6	PAB-9
Calibre	7.62x42	9x39	9x39	9x39
Weight, g:				
round	24	23	23	14
bullet	10	16	16	17
Round length, mm	42	56	56	56
Muzzle velocity, m/s	195-205	285-295	285-295	285-295
Penetration capability, m:				
steel helmet	25	400	400	400
BZh-81-type body armour	-	-	400	400
Case material	clad metal	steel	steel	steel

50mm RGS-50

Grenade Launcher

Mission

A multi-role grenade launcher system, comprising the RGS-50 special-purpose portable grenade launcher and various grenades, is designed to temporarily render enemy personnel ineffective, including personnel inside buildings, as well as to urgently blast doors. RGS-50 is a heavy-weight grenade launcher, fired at long (up to 150 m) ranges from target. Simple in design, the grenade launcher still boasts reliable operation in any environment. RGS-50 is an efficient weapon allowing special operations units of law enforcement bodies to discharge a variety of tasks during anti-terrorist operations.

A whole range of various purpose grenades is launched from RGS-50: GSZ-50 light and sound grenade; GS-50M tear-gas grenade; GV-50 grenade for urgent blasts of doors; EG-50M rubber grapeshot grenade; EG-50 elastic warhead grenade; GO-50 fragmentation grenade; GK-50 shaped-charge grenade; and GD-50 smoke grenade.

General description

The grenade launcher has a single smooth-bore barrel (tipped down like that of a hunting-gun). It is loaded from the breech. The launcher features a hydro-spring shock absorber to reduce recoil. The shock absorber is integrated into a butt-stock, equipped with a rubber pad. Such a design of the muzzle brake allows launching 0.4kg grenades at a 90 m/s muzzle velocity.

A trigger mechanism with an internal cock is armed by opening the barrel. A safety catch blocks the sear when engaged. A mechanical sight consists of a backsight and a folding foresight with cuts for firing ranges of 50, 100 and 150 m.

The grenade launcher has been adopted for service in Russia.

Basic specifications of launcher	
Calibre, mm	50
Effective range of fire, m	150
Grenade muzzle velocity, m/s	about 90
Weight, kg:	
launcher	6.3
grenade	0.39...0.42
Length, mm	890

Basic specifications of grenades					
	EG-50	EG-50M	GS-50M	GSZ-50	GO-50
Effective range of fire, m	18-40	Up to 10	400	400	60...100
Warhead muzzle velocity, m/s	48-58	50-60	92	92	92
Warhead weight, kg	0.085	0.140	0.39	0.39	0.395
Number of elastic elements, pcs	-	56	-	-	-
Irritant agent	-	-	(CN)	-	
Flash intensity, Mkd	-	-	-	at least 2	-
Level of noise pressure at a range of 10 m, dB	-	-	-	at least 135	-
Manpower killing range, m radial direction	-	-	-	-	up to 7

33mm RGS-33

Grenade Launcher

Mission

A multi-role portable grenade launching system, comprising the RGS-33 special-purpose portable grenade launcher and various grenades, is designed to render ineffective enemy personnel, including those inside buildings. RGS-33 is a light-weight grenade launcher to be primarily used in assaults of buildings captured by terrorists. It features a simple design, which still ensures reliable operation in any environment. RGS-33 is an effective weapon, which allows law enforcement troops to discharge a vast variety of tasks during anti-terrorist operations.

Basic specifications of grenade launcher	
Calibre, mm	33
Effective range of fire, m	25
Grenade muzzle velocity, m/s	50
Launcher weight, kg	2.5

General description

A whole range of grenades of various purposes can be launched from RGS-33: GSZ-33 light and sound grenade; GS-33 tear-gas grenade; EG-33M rubber grapeshot grenade; and EG-33 elastic warhead grenade.

Grenade launcher has three flipping smoothbore barrels (hunting-gun design). The weapon is loaded from the breech. Small size and weight of the grenade launcher allow it to be fired from one hand.

The EG-33 grenade with an elastic warhead is designed to temporarily render a criminal ineffective. This is achieved by shock-effect deforming elastic warhead.

The EG-33M rubber grapeshot grenade is designed to temporarily neutralise a criminal. It is achieved by a combined psychological effect of sound and flame of the shot together with the shock effect of the rubber grapeshot. The effective range of fire is up to 10 m.

The grenade launcher has been adopted for service in Russia.

Basic specifications of grenades		
	EG-33M	EG-33
Calibre, mm	33	33
Effective range of fire, m	up to 10	up to 25
Warhead muzzle velocity, m/s	50-60	50-60
Rubber grapeshot total weight, kg	0.05	-
Rubber grapeshot dispersion diameter at 5 m, m	0.6...1.0	-
Number of elastic elements	62	-
Warhead weight, kg		0.08

SPRINT

Aiming System

The Sprint system includes an infrared target designator and Orion-type NVG. The former generates infrared beam, while the latter ensures night vision capability, including watching an IR spot on target. Laser wavelength is invisible for naked eye. Aiming spot can only be seen through the night vision goggles. The laser target designator is set parallel to the barrel of a weapon and is harmonised with it by means of the adjustment system. As a result, the Sprint system provides for aiming without a usual sight. One only has to keep the IR spot on target.

Basic specifications	
Effective range of fire with NVG, m:	
Orion-1	110 – 120
Orion-2	150 – 160
Orion-3	200 – 260
Emitted power, mW	1
Operating wavelength, μm	0.83
Divergence angle at 100 m, cm	10
Mode of operation	continuous/pulse
Operating temperature range, °C	± 40
Continuous operation without changing batteries	7,000 flashes
Power supply (3 AA cells), V	4.5
Weight, kg	0.4

IZUMRUD

Combined Surveillance Device

The Izumrud device is designed to provide night vision capability displaying additional information as to the presence of radiant objects.

Izumrud consists of two channels, night vision and heat seeking ones. It does not require any cooling.

Izumrud is a unique system having no rivals both in Russia and abroad.

Izumrud can be employed to:

- search victims of industrial and natural disasters;
- assess condition of power lines (heating mains, steam pipes, etc.);
- facilitate protection of various objects.

Basic specifications	
Operating frequency band, μm	0.4 – 0.9 and 8 – 14
Magnification of night vision channel	1 x
Field of view, deg	40
Operating temperature range, °C	± 40
Primary power supply, V	12 ± 1
Power consumption, W	up to 1.0
Dimensions, mm (with lens and eye-glass)	210x60x150
Weight (without power supply unit), kg	1.0

ORION-4 (GNOM)

Miniscope

Mission

The Orion-4 system is designed to:

- provide night vision capability;
- identify authenticity of bank notes with high level of protection (with additional IR-filter).

Features

- small size, light weight
- ease of operation
- adjustable dioptre
- adjustable interpupiliary distance
- refocusing lens

The miniscope ensures normal 3D orientation providing quality images that are uniform throughout the whole field of view thanks to the use of an image-converter tube with a fibre-optic plate. The system enables its user to see far enough owing to excellent combination of the image-converter tube parameters and dedicated optics. Orion-4 is easy to operate, and it has an integral infrared illumination source. It features a reliable design, and is dust and water resistant.

Basic specifications	
Magnification, power	1 x
Field of view, deg	40
Identification range of man's figure at normal night illumination (starlight night), m	150
Focal distance, mm	20
Lens aperture ratio	1:1
Focusing range, cm	25 to •
Dioptre adjustment, dioptres	± 4
Operating temperature range, deg	± 40
Continuous operation at 20 °C, hrs	10
Power supply (1 CR1/3 – Blik-1, TOSHIBA, VARTA cell, etc), V	3.0
Dimensions, mm	120x65x56
Weight, kg	0.28

ORION-5

Night Vision Binoculars

The Orion-5 night vision binoculars are designed to ensure concealed surveillance at night.

The Binoculars are based on the Second plus, Super and Third generation image-intensifying tubes with an increased-sensitivity multi-alkaline photo-cathode, a micro-channel plate, high conversion ratio and an integrated high-voltage battery. The device has a quality catadioptic lens and a specially developed eyeglass system.

Automatic brightness adjustment preventing intense light exposure ensures protection of the device against bright sources of light. The binoculars ensure long ranges of surveillance under conditions of natural night illumination. The device provides dioptre and interpupiliary adjustment.

Basic specifications	
Magnification, power	4 x
Field of view, deg	10
Identification range of man's figure at night, m:	
with IIT 2+ gen.	600
with IIT Super Gen.	750
with IIT 3 gen.	800
Focal distance, mm	100
Focusing range, cm	25 to •
Dioptre adjustment, dioptres	± 4
Operating temperature range, deg	± 40
Continuous operation at 20 °C, hrs	24
Power supply, V	2.5-3.0 (2 AAA cells)
Weight, kg	0.29

ORION-7 (GNOM-O)

Night Vision Miniscope

The small-size night vision miniscope is intended to provide night vision capability, as well as astronomic and covert surveillance.

It features a specially developed optical system, ensuring quality images in a wide field of view. The miniscope provides long surveillance ranges owing to optimal integration of the image-intensifying tube and dedicated optics.

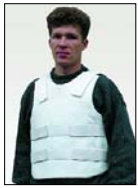
The system is easy to operate and it has an integral infrared illumination source. Orion-7 features sufficient dioptre and focal length adjustment. It has a reliable design, and is dust and water-resistant.

Basic specifications	
Magnification, power	1.8 x
Field of view, deg	30
Identification range of man's figure at night, m	120
Focal distance, mm	20
Lens aperture ratio	1:1
Focusing range, cm	25 to •
Dioptre adjustment, dioptres	± 4
Operating temperature range, deg	± 30
Continuous operation at 20 °C, hrs	24
Power supply, V	2.5 – 3.0 (2 AAA cells)
Weight, kg	0.29

KIRASA

Flak Jakets

Kirasa-Universal flak jacket



Kirasa-Universal SN flak jacket

Kirasa-Universal SN floating flak jacket

Kirasa-L flak jacket

Kirasa flak jackets provide all-round protection of man's torso from injuries caused by fragments, cold steel and pistol bullets, while flak jackets with steel or ceramic armour plates in the area of chest and back ensure protection of vital human organs from various rifle and assault rifle bullets.

Kevlar fabric with water-proof impregnation, used as ballistic material, ensures reliable protection in any operating conditions, including 100 per cent humidity or long stay under rain or submergence in water.

All models except Kirasa-F can be reinforced by being fitted with reinforcement armour plates. Application of specially designed anti-ricochet packs eliminates hit probability by secondary fragments caused by high-speed bullets. Protection class of flack jackets may vary depending on type of armour plates.

Special design of a shock absorber provides ventilation under the flak jacket, thus preserving normal temperature of body for a long time, which is especially important in hot climates.

Flexible anti-trauma panels ensure maximum reduction of concussion effect, as well as protect against blunt injuries.

Shape of armoured elements, adjustable fasteners and other design features allow for easy adjustment of body armour to figure.

A caprone bag is provided for carrying the flak jacket.

Soft armour area, material and cover colours are selected at customer request, as are additional elements, such as anti-fragment and anti-bullet protection in the area of neck, groin and shoulders (collar, apron and scapular).

All Kirasa flack jackets come in three sizes: L, XL, and XXL.

Kirasa-Universal flack jacket

The Kirasa-Universal flack jacket is designed to be worn by police and army personnel. The jacket weight can vary, depending on its size and variant, and amount to 2.8-6.7 kg. It may be fitted with all types of reinforcement armour plates.

Kirasa-Universal SN flack jacket

The Kirasa-Universal SN masked flack jacket is designed to be worn by personnel of all power structures, bodyguards and civilians. The jacket weight can vary, depending on its size and variant, and amount to 2-5 kg. It may be fitted with A, B, C, D, E, F armour plates.

Kirasa-Universal SN floating flack jacket

The Kirasa-Universal SN floating flack jacket is designed to be worn by port patrols, coast guards, customs officers, police and army units deployed on vessels or near water basins.

The flack jacket, designed as a life vest, is floatable. It can also be worn with a special cover for masked usage, however in this case it lacks floatability.

The jacket weight can vary, depending on its size and variant, and amount to 2.5-3.7 kg. It may be fitted with A, B, C, D, E, F armour plates.

Kirasa-D flack jacket

The Kirasa-D flack jacket is designed to be worn by police, army and special operations units.

Kirasa-D flak jacket

Kirasa-N flak jacket

Kirasa-F flak jacket

The breast and back of the jacket are provided with clip-on straps over shoulders and a wide waist belt for carrying cartridge-pouches. The collar, which is made inseparable from jacket, has cuts in the areas of the breast and back. The apron can be folded onto the jacket. Shoulder and neck protection elements are flexible with respect to jacket. The jacket weight can vary, depending on its size and variant, and amount to 3.4-5.1 kg. It may be fitted with all types of reinforcement armour plates.

Kirasa-L flack jacket

The Kirasa-L flack jacket is designed to be worn by crews of armoured vehicles, special

Specifications of reinforcement armour plates

Desig-nation	Material	Dimensions, mm	Weight, kg	Protection class according to standards	
				GOST R 50744-95	NIJ 0101.04
A		2.5x260x280	1.3	2	III-A
	Armour steel			TT pistol	.44 Magnum
B		2.5x270x330	1.7	7.62x25 5,5 g	15.55 g ; V=441 m/s
				V=445 m/s	9 mm FMJ 8.0 g
					V=441 m/s
C		4.5x260x280	2.3	3	* III
	Armour steel			AK74 5.45x39	.308 Winchester
D		4.5x270x330	2.9	3.4 g; V=890 m/s	7.62x51 FMJ 9.7 g
				AKM 7.62x39,	V=853 m/s
				7.9 g; V=725 m/s	
E		6.5x260x280	3.2	5	III
	Armour steel			AKM 7.62x39	.308 Winchester
F		6.5x270x330	3.9	7.9 g; V=725 m/s	7.62x51 FMJ 9.7 g
				SVD 7.62x54	V=853 m/s
				9.6 g; V=833 m/s	
K	Ceramics Al_2O_3	25x260x280	3.5	6	IV
				SVD 7.62x54	30-06 7.62x63 AP
				9.6 g; V=835 m/s	10.8 g; V=868 m/s

vehicles and helicopters.

The collar, which is made inseparable from the jacket, has cuts in the areas of breast and shoulders. The apron is made detachable and can be folded onto the jacket.

The jacket weight can vary, depending on its size and variant, and amount to 2.8-7.2 kg. It may be fitted with all types of reinforcement armour plates.

Kirasa-N flack jacket

Kirasa-N flack jacket is designed to be worn by army and police special operations units.

The jacket weight can vary, depending on its size and variant, and amount to 3-6.9 kg. It may be fitted with all types of reinforcement armour plates.

Kirasa-F flack jacket

The Kirasa-F flack jacket is designed to be worn by police, army and special operations units.

The breast and back of jacket are permanently fixed over shoulders and have clip-on waist belts. The breast is provided with fasteners. Shoulder and neck protection elements are flexible with respect to the jacket. The collar, inseparable from the jacket, has cuts in the areas of breast and back.

The jacket weight can vary, depending on its size, and amount to 2.9-5 kg.

Quality of the flack jackets is both combat and laboratory proven with ballistic tests showing excellent results both in Russia and abroad.

Kirasa-BSh-E helmet

The Kirasa-BSh-E helmet is designed to protect police and special forces units from fragments and pistol bullets. The hull is a multilayer composite structure, based on aramid fiber fabrics and organic matrix. The helmet comes complete with a camouflage cover. Protection level and standard are defined at customer request.

The helmet is available in two sizes: size 1 – 54-57 cm, and size 2 – 58-60 cm. Its weight can vary, depending on its size and protection level, and amount to 1.4-1.7 kg.

LAND FORCES WEAPONS

MUNITIONS DISPOSAL

RUSSIAN TECHNOLOGY and EQUIPMENT for CONVENTIONAL MUNITIONS PACKAGE DISPOSAL

Package disposal implies fail-safe, ecologically-sound industrial recycling of all the components of conventional munitions into civil-purpose products and materials.

Disposal of the most hazardous elements of munitions comprises the following stages:

- munitions disassembly;
- propellant charge extraction;
- explosives extraction;
- disassembly and disposal of fuses, caps, primers, etc.;
- disposal of non-explosive components.

Depending on the type of ammunition various techniques are used to extract explosives from casing:

- extraction by applying hot water or steam externally;
- bleeding by means of inert organic heat carrier (paraffin);
- high pressure hydro-bleeding;
- mechanical extraction, cementation or explosion of extremely hazardous elements in special chambers;
- burning-off or explosion in chambers.

To dispose of conventional munitions, stationary industrial installations and modular containerised mobile systems have been designed to operate at storage facilities.

Disposal is ecologically friendly due to elimination of open-air burning and explosion procedures, as well as employment of airtight equipment, water purification systems, special filters and collectors during controlled burn-down of some munitions or their elements.

Extracted materials are converted into explosives or various industrial blasting products.