

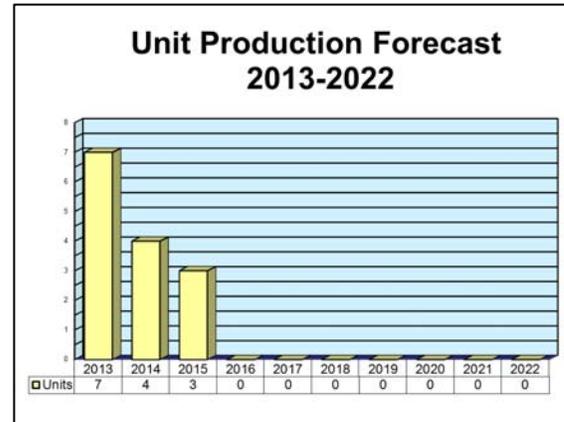
ARCHIVED REPORT

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BTR-90

Outlook

- In 2011, the Russian MoD rejected the BTR-90 for procurement by the Russian Armed Forces
- Rosoboronexport is no longer actively promoting the BTR-90 on the international market
- Forecast reflects slim prospects for export sales through 2022



Orientation

Description. A wheeled armored vehicle.

Sponsor. The Ministry of Defense of the Russian Federation continues to sponsor this legacy program of the Soviet Union.

Licensees. None

Status. Development through low-rate production.

Total Produced. Through 2012, we estimate that the prime contractor produced three prototypes, four operational test vehicles, and 139 production BTR-90 vehicles.

Application. A wheeled armored vehicle optimized for transporting infantry during offensive and defensive operations.

Price Range. The basic BTR-90 reportedly carries a unit price of about \$340,000 in 2013 U.S. dollars.

Contractors

Prime

Federal State Unitary Enterprise, Rosoboronexport, Rosoboronexport State Corp	http://www.roe.ru , 27/3 Stromynka St, Moscow, 107076 Russian Federation, Tel: + 7 495 964 61 40, Fax: + 7 495 963 26 13, Prime
Arzamas Machine-Building Plant JSC	http://www.amz.ru , 2, 9th May St, Arzamas, 607220 Nizhny Novgorod, Russian Federation, Tel: + 7 83147 96 40, Fax: + 7 83147 4 31 40, Email: oao_amz@amz.ru, Second Prime

Subcontractor

Chelyabinsk Tractor Plant (ChTZ-URALTRAC)	http://www.chtz-uraltrac.com , Lenin Ave 3, Chelyabinsk, 454007 Russian Federation, Tel: + 7 351 772 95 82, Fax: + 7 351 772 08 30, Email: tractor@chtz.chel.ru (BTR-90 Diesel Engine)
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Electromashina	http://www.electromashina.ru , 21, Mashinostroitelei, Chelyabinsk, 454129 Russian Federation, Tel: + 7 7351 255 22 33, Fax: + 7 7351 255 22 35, Email: inbox@electromashina.ru (BTR-90 Electronics Suite)
KBP Instrument Design Bureau	http://www.kbptula.ru , 59 Shcheglovskaya Zaseka St, Tula, 300001 Russian Federation, Tel: + 7 4872 41 0210, Fax: + 7 4872 42 6139, Email: kbkedr@tula.net (Kliver Turret Assembly)
Tulamashzavod JSC	http://www.tulamash.ru , 2 Mosin St, Tula, 300002 Russian Federation, Tel: + 7 4872 32 10 09, Fax: + 7 4872 27 26 20, Email: wmzp@tulamash.ru (30mm 2A42 Automatic Cannon)

Comprehensive information on Contractors can be found in Forecast International's "International Contractors" series. For a detailed description, go to www.forecastinternational.com (see Products & Services/Governments & Industries) or call + 1 (203) 426-0800.

Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 22 Commerce Road, Newtown, CT 06470, USA; rich.pettibone@forecast1.com

Technical Data

Crew. Three: commander, gunner, and driver, plus seven fully equipped infantrymen.

Configuration. 8x8

Armor. Steel-alloy armor provides protection against 14.5mm armor-piercing (AP) projectiles over the frontal arc. The armor protects against 7.62mm AP projectiles and ballistic fragments over the rest of the vehicle. Appliqué and explosive reactive armor will likely be available.

Dimensions. The following data reflect the definitive prototype BTR-90. Height is to the top of the searchlight.

	<u>SI Units</u>	<u>U.S. Units</u>
Length	7.64 m	25.07 ft
Width	3.20 m	10.49 ft
Height	2.98 m	9.78 ft
Combat weight	20.92 tonnes	23.06 tons
Fuel capacity	320 l	85.11 gal

Performance. The speed and range data reflect use on a paved road.

	<u>SI Units</u>	<u>U.S. Units</u>
Maximum speed	100 kmph	62.14 mph
Maximum range	800 km	496.80 stat mi
Step	80 cm	2.62 ft
Trench	2.1 m	6.89 ft
Slope	30%	30%
Gradient	60%	60%
Fording	amphibious	amphibious
Water speed	9 kmph	5.59 mph

Engine. Unidentified liquid-cooled supercharged diesel engine made by Chelyabinsk Tractor Plant. The powerplant reportedly generates 380.46 kilowatts (510 hp), with a power-to-weight ratio of 18.19 kilowatts per tonne (22.12 hp/ton). A 24-volt electrical system supports vehicle operations. Two steerable water jets provide water propulsion.

Gearbox. Unspecified manual gearbox with one reverse and five forward gear ratios. The drivetrain employs a two-gear transfer case.

Suspension and Running Gear. Torsion bar suspension with hydraulic shock dampers. Each of the front four wheels mounts two shock dampers; the back

four wheels each mount a single shock damper. The vehicle employs hydraulically assisted power steering. A central tire pressure inflation system regulates the run-flat tires.

Armament

Main Armament. Dual-feed 30x164mm 2A42 cannon with 500 rounds of ammunition in an all-welded steel turret. Elevation (+74°), depression (-5°), and turret traverse (360°) are electrically operated with manual backup.

Secondary Armament. One coaxially mounted 7.62x54mm PKT machine gun with 2,000 rounds of ammunition. In addition, one 30mm AGS-17 automatic

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grenade launcher (with 400 rounds of ammunition) mounts on the turret roof, as does a launcher for the 9M113/113M Konkurs (AT-5 Spandrel) anti-tank guided missile system. The vehicle carries four 9M113 missiles. Three 81mm 902V electrically operated smoke grenade launchers mount on each side of the turret.

The troop compartment features 10 firing ports. Two forward firing ports accommodate 7.62x54mm PK machine guns; eight firing ports are compatible with 5.45x39mm AKMS and AK-74 battle carbines.

Variants/Upgrades

Variants. To date, the prime contractor has revealed two BTR-90 variants. The first variant appears to integrate the turret and armament of the BMP-3 with a modified BTR-90 chassis. For more information on this armament suite, see our "BMP-3" report in the *Military Vehicles Forecast*.

The second variant, introduced in 2009, integrates a KBP Berezhok weapons system and turret onto the BTR-90 chassis. The Berezhok system was first implemented as an upgrade for Russia's BMP-2 line of vehicles, but can be mounted onto a wide array of light combat vehicles.

The Berezhok system is most notable for the addition of two sets of Kornet-E ATGM launchers mounted on each side of the vehicle's turret, as well as a 30mm AG-30

automatic grenade launcher on top of the turret structure.

The Berezhok variant mounts the same 7.62mm PKTM coaxial machine gun and 30mm 2A42 cannon as the base BTR-90 model.

The upgraded turret also integrates an automated day/night Fire Control System for the gunnery crew.

Based on the developmental history of the earlier BTR series vehicles and the Russian Ministry of Defense's emphasis on modernization over the coming decade, several variants of the BTR-90 are probable despite the cessation of development.

Modernization and Retrofit Overview. Not applicable at this time.



BTR-90 Armored Personnel Carrier

Source: Rosoboronexport

Program Review

Background. The BTR-90 represents the fourth generation of modern Soviet wheeled 8x8 armored personnel carriers (Bronetransportr), which began with the highly successful BTR-60 series in early 1960.

The BTR Series Rolls On

Through the early 1980s, the Russians produced about 25,000 BTR-60 series vehicles. Even today, the BTR-60P remains in service in large numbers in the Russian Federation and many other nations.

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Entering service in 1984, the BTR-80 (and later BTR-80A) represents the Russian Army's most advanced version of the BTR series. For a detailed discussion of the BTR-80 and BTR-80A, see the "BTR-80" report. Although the 30mm 2A72 cannon of the BTR-80A is a great improvement over the 14.5mm machine gun of the original BTR-80, the lack of a full turret on the BTR-80A remains a notable design deficiency.

BTR-90: the Next Generation?

In 1994, the Russians publicly revealed the next-generation BTR vehicle, designated O'biect 51 or GAZ-5923. The vehicle has become more commonly known as the BTR-90.

According to the prime contractor, the vehicle entered low-rate initial production in 2007.

In 2011, the Russian Ministry of Defense released its latest State Armaments Program, which spans the period from 2011-2020. However, the BTR-90 was notably absent from the plan, and the MoD soon revealed that it had rejected the vehicle for broad adoption by the Russian Armed Forces. The MoD cited the program's failure to address fundamental design deficiencies from prior BTR series vehicles as the primary rationale for its rejection of the BTR-90.

The MoD's displeasure with the vehicle's antiquated design was exacerbated by the high cost of producing new BTR-90 vehicles relative to that of updating prior BTR series to a comparably modern standard.

Russian Wheeled Armor at a Crossroads

The MoD and VPK are now collaboratively developing the next generation of wheeled armored vehicles for the Russian Armed Forces. The program is presently operating under the title "Boomerang." The new design will reportedly incorporate weapons systems and technology from the BTR-90 program while also rectifying the fundamental design deficiencies that led to that vehicle's rejection by the MoD.

In addition, the Boomerang will reportedly incorporate modular design elements in order to be able to perform a multitude of roles within the Russian services. Serial production of the Boomerang is slated to begin by 2015, with the first test units arriving in 2013. The MoD reportedly aims to phase out earlier BTR series vehicles from service as the Boomerang enters full-rate production.

In the near term, the MoD will largely be shifting focus toward the modernization and retrofitting of existing BTR series vehicles, in line with the goals established by Russia's 2011-2020 State Armament Program.

Description. From all appearances, the BTR-90 is generally similar to the BTR-80, but somewhat larger.

Standard BTR Layout

The BTR-90 shares the typical BTR series interior layout. The driver sits in the left front of the vehicle; one infantryman sits to the driver's right. Each position features a single-piece hatch cover, windows with armored shutters, and day periscopes. The driver's station also features an infrared or passive night-viewing device.

BMP-2 Turret

The BTR-90 mounts the complete turret of the BMP-2 mechanized infantry fighting vehicle at its centerline, between the first and second axles. In this turret, the gunner sits to the left of the 30mm 2A42 ordnance; the commander sits to the right.

The troop compartment occupies the midsection of the vehicle, beneath and to the rear of the turret. Seven infantrymen sit back-to-back on a bench in the middle of the compartment. The compartment's sidewalls each feature three forward-angled firing ports; each of the troop compartment's two roof hatch covers features an additional firing port.

In addition to the roof-mounted hatches, the troop compartment features a two-piece door on each side of the hull – between the second and third axles – for troop access/egress. The upper portion of the door opens to the front; the lower portion hinges downward to form a step.

The engine compartment occupies the rear of the vehicle. The water jet mechanism for water propulsion mounts at the rear of the hull. The engine powers the water jet directly via a short drive mechanism.

Other features of the BTR-90 include bilge pumps in the engine and crew compartments; a nuclear, biological, and chemical (NBC) protective suite; DP-3B radiation detection equipment; VPX-R chemical detection equipment; the crew communications system; and the P-123M (or following) radio.

Related News

Russia Sees \$50 Billion Arms Market in Latin America – The head of a Russian Technologies (Rostec) high-tech state corporation delegation, Sergei Goreslavsky, said on May 18 at the international arms exhibition in Peru (SITDEF Peru 2013) that Russia will actively seek new arms deals in Latin America.

According to Goreslavsky, Argentina, Brazil, Mexico, Peru, and Venezuela are all interested in buying helicopters and air defense systems. Arms sales to the region are expected to reach \$50 billion in the next 10 years, he said.

During the exhibition, discussions were held with Peru regarding the purchase of Russian trucks, helicopters, and tanks. Moscow is also considering allowing Bolivia to purchase 10 Mi-8/17 helicopters on credit.

Over the past 12 years, Rosoboronexport has sold \$14.5 billion worth of weaponry to Latin American countries. Between 1999 and 2007, Russia increased its share of the Latin American market from 0.7 percent to over 7.7 percent as the portion of Russian arms being delivered to Latin America increased from 3 percent to 17 percent.

Venezuela remains the number one buyer of Russian arms. Signed contracts between Russia and Venezuela now amount to almost \$11 billion since 2006. Caracas initially purchased 24 Su-30MK2 fighter jets, more than 50 transport and attack helicopters, and 100,000 AK-103 Kalashnikov assault rifles with ammunition. Between 2006 and 2012, Venezuela purchased T-72B1 tanks, BMP-3M infantry fighting vehicles, BTR-80A armored personnel carriers, Msta-S 152mm self-propelled howitzers, Nona-SVK 120mm self-propelled mortars, Pechora 2M missiles, mobile BM-30 Smerch 300mm multiple rocket launchers, Bal-E mobile coastal defense systems, Buk-M1-2 medium-range air defense missiles, and S-300VM long-range surface-to-air missile systems. (FI, 5/13)

Russian Military Tests New BTR-82AM APCs – A new amphibious armored personnel carrier (APC) for the Russian Armed Forces, the BTR-82AM, is undergoing testing at the Black Sea Fleet's naval infantry facility in Sevastopol.

The BTR-82AM is the latest upgraded version of the BTR-80 8x8 wheeled APC. Russia plans to replace its fleet of BTR-80s with the new BTR-82AM version. The new APC incorporates an automatic 30mm artillery system, offering greater firepower than its predecessor. The upgraded version also features improved armor and is equipped with the GLONASS navigation system and a more powerful 300-horsepower engine.

In October 2012, the Russian Ministry of Defense published a tender for the upgrade and assigned a maximum value to the work of RUB2.82 billion (\$89.94 million). (FI, 4/13)

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Funding

Not available, as the Russian government has not released funding information regarding this program.

Contracts/Orders & Options

None available, as Rosoboronexport has not released contractual information regarding this program.

Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
Early	1990s	BTR-90 initial development
Sep	1994	Russian federation publicly reveals BTR-90
Mar	2001	BTR-90 with new turret debuts at IDEX weapons fair
Mid-	2005	Development and operational testing; preparations for low-rate initial production
	2007	Contractor announces start of BTR-90 low-rate initial production
	2008	Russian Army type-classifies O'biect 51 as the BTR-90 for Russian Army service
	2011	Russian Army rejects the adoption of BTR-90 in the 2011-2020 Armaments program

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<u>Month</u>	<u>Year</u>	<u>Major Development</u>
	2013	Domestic procurement ceased; production as required for export

Worldwide Distribution/Inventories

Export Potential. The BTR series has done moderately well on the international market, aided in large part by the generous policies of the former Soviet Union. Now operating in an open international market, the Russian designs must compete with more sophisticated offerings from other major players. In this market, the Russian vehicles have one major market advantage – bargain-basement unit prices. However, given the availability of BTR-60 and BTR-80 vehicles, the likelihood of the BTR-90 attracting export sales remains minimal.

Countries. Russian Federation (3 developmental prototype vehicles, 4 operational test vehicles, and 139 production vehicles).

Forecast Rationale

In 2011, the Russian Ministry of Defense announced that it was rejecting the BTR-90 for broad adoption by the Russian Armed Forces.

This decision effectively marked the end of the BTR-90 program, and reports suggest that production of the model for domestic procurement has ceased.

Slim Export Prospects

Despite initial hopes that the vehicle might find a second life on the international market, Rosoboronexport is no longer actively promoting the BTR-90 for export sale.

Although BTR-90 production could potentially be reinitiated pending a specific request from a foreign buyer, the overall market interest in the model is minimal at best.

The MoD's rejection of the vehicle for Russian Army procurement has done little to inspire buyer confidence in the vehicle's quality. Additionally, few potential customers can justify the vehicle's relatively high unit

cost when measured against more affordable alternatives with comparable or superior performance, such as the BTR-82/82A or Ukrainian BTR-4.

Failed Fourth-Generation BTR?

In the near term, the Russian Army is orienting armored vehicle procurement toward the retrofit and modernization of existing inventories, as well as the purchase of upgraded new-build variants such as the recently launched BTR-82A.

These measures aim to enhance the Army's armored capability while avoiding excessive cost during the interim period prior to the launch of the 'Boomerang'. Ultimately, the BTR-90 did not fit into the MoD's new vision for the Russian forces.

As a result of these domestic factors and the vehicle's minimal export prospects, the Forecast International Weapons Group expects that low-rate production of the BTR-90 will soon give way to a dormant production line.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR UNIT PRODUCTION												
Designation or Program	High Confidence					Good Confidence			Speculative			Total
	Thru 2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Arzamas Machine-Building Plant JSC												
BTR-90												
	146	7	4	3	0	0	0	0	0	0	0	14
Total	146	7	4	3	0	0	0	0	0	0	0	14