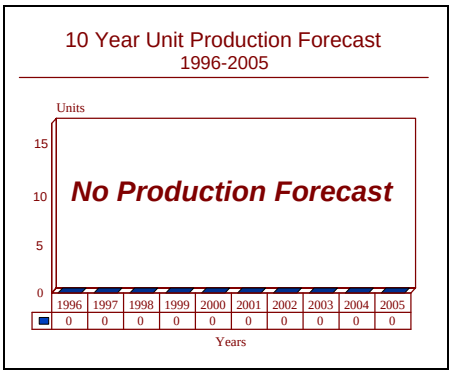
T.64 - Archived 5/98

Outlook

- Production of the T.64 ended in 1982
- Total of 14,495 T.64 tanks manufactured
- This tank remains in service in three nations
- No significant modernization or retrofit programs are forecast



Orientation

Description. A tank

Sponsor. The development and procurement by the former Soviet Union of this tank was sponsored by the Ministry of Defense of the former Soviet Union through the Sixth Central Directorate of the Army supported by the Technical Institute for Armored Technology and the Military Transport Machine Building Research Institute. Continued support is by the Ministry of Defense of the Russian Federation.

Contractors. This tank was designed by the Morozov design bureau with some possible assistance from the A. F. Kartsev design bureau. The manufacture of the T.64 in the former Soviet Union took place at the Soviet Tank Plants, specifically the Malyshev tank plant in Kharkov (Zavod 75) and the Omsk Tank Plant (Zavod 13).

Licensees. No known license manufacture of the T.64 took place.

Status. Production of the T.64 terminated in early 1982. The tank remains in service in the Russian Federation and at least two members of the Commonwealth of Independent States.

Total Produced. A total of 14,495 T.64 tanks were manufactured.

Application. A tank for the projection of power, as well as defensive missions.

Price Range. Although difficult to ascertain, recently released data indicates that the unit price for a serially produced T.64B was $1.221 million in equivalent 1981 United States dollars. This tank has not been traded on the open or export market, even to the former Warsaw Pact nations.

Technical Data

Design Features. In its final production model, this tank features composite armor, a three man crew, a 125 millimeter tank cannon, an automatic loading system for the main armament, and a horizontally opposed five cylinder diesel engine.

Crew. Three: commander, gunner, driver

Armor. The low silhouette hull of the T.64 is fabricated from conventional rolled homogeneous steel alloy armor ("Combination K") with a maximum thickness of 20 centimeters on the glacis. The turret is a single piece casting with a maximum thickness of 25 centimeters. This tank was the first in the world to be fielded with composite/ceramic armor with cavities at strategic locations. The T.64B has a refined version of this armor

offering the same level of protection but at a reduced bulk. The hull armor is often supplemented by explosive reactive armor and sometimes other appliqué armor. The interior of the turret is lined with a lead-based liner of neutron resisting armor.

Dimensions. This data is for the T.64B, the standard to which most, if not all T.64 tanks have been upgraded to. The first figure in the fuel capacity is the internal fuel; this is followed by the externally carried fuel.

	SI units	**US units**
Length	9.9 meters	32.47 feet
Width	3.38 meters	11.09 feet
Height	2.2 meters	7.22 feet
Combat weight	39.53 tonnes	43.57 tons
Fuel capacity	1,000/400 liters	265.95/106.38 gallons

Performance. The maximum speed and range figures are on a metalled road; the range figure is for without and with the extra fuel tanks.

Maximum speed	75 kilometers per hour	46.57 miles per hour
Maximum range	405/554 kilometers	251.5/344 statute miles
Step	80 centimeters	2.63 feet
Trench	2.28 meters	7.48 feet
Slope	41%	41%
Gradient	60%	60%
Fording	1.8 meters	5.91 feet

Engine. The T.64 uses the 5TDF liquid cooled opposed five cylinder diesel engine rated at 522.2 kilowatts (700 horsepower) at 33.34 revolutions per second (2,000 revolutions per minute); the power-to-weight ratio is 13.21 kilowatts per tonne (16.07 horsepower per ton). The engine is mounted on its side in order to fit in the low silhouette hull. This engine is a product of an unknown design bureau of the Russian State Factories. A 24 volt electrical system is the standard electrical fit. The engine is fitted with a pre-heating system.

Gearbox. This tank uses an unspecified hydraulically assisted but manually operated unit with seven forward and one reverse gear ratios.

Suspension and Running Gear. The T.64 uses a hybrid torsion bar/hydro-pneumatic type suspension with six small stamped construction type dual road wheels and four track return rollers on each side. The first, second, fifth and sixth road wheel stations are provided with hydraulic shock dampers. The track is of the live type.

Armament. The initial low rate production models of the T.64 mounted the 115 millimeter D.68 tank cannon. The T.64 and T.64A mount the 2A26 125 millimeter smooth bore tank cannon; it is fitted with a thermal shield and fume extractor. The muzzle velocity with the Hyper Velocity Armor Piercing Fin Stabilized Discarding Sabot ammunition is 1,680 meters per second (5,511.7 feet per second). This cannon is fed from the korzina (basket) automatic loading system with the projectile component of the separate type ammunition stored in a cassette located in the floor of the fighting compartment and the propellant cartridges stored in a near vertical position around the lower portion of the turret. After firing, the cannon automatically returns to the index position for reloading. Main armament elevation and turret traverse is electric in operation with manual back-up. The 2A26 cannon fires the BM-9 and BM-12 Armor Piercing Fin Stabilized Discarding Sabot, BK-14M High Explosive Anti-Tank and the OF-19 High Explosive - Fragmentation ammunition. A total of 40 rounds is carried. This cannon is fully stabilized in two planes. The secondary armament consists of a 7.62 millimeter PKT (SGMT) machine gun coaxially mounted, and one 12.7 millimeter DShKM machine gun mounted on the turret roof at the commander's position. Six smoke grenade launchers are mounted on each side of the turret.

The T.64B mounts a modified version of the 2A26 125 millimeter smooth bore tank cannon. In addition to firing the standard ammunition patterns as the 2A26 described immediately above, this version of the 2A26 is integrated with the 9K112 anti-tank guided missile system which fires the 9M112 Kobra (NATO designation AT-8 Songster) missile through the barrel. This missile, with a range of four kilometers (4,374.4 yards) is carried (albeit in two sections) and loaded from the automatic loader in the same manner as the other ammunition. When loaded, the two sections are joined together, the breech closed and the missile fired. Command guidance via radio link is used; the Kobra missile has a High Explosive Anti-Tank warhead. The

same secondary armament and smoke grenade launchers as mounted on the T.64/T.64A is used on the T.64B.

Fire Control. The fire control suite of the T.64 represented a major advance in Russian tank technology. The T.64 and T.64A system is based on the TPD2 coincidence rangefinder and also consists of the TPN-1-49-23 infrared periscopic day/night sight as the gunner's primary infrared sight along with the TShS gunner's telescopic sight with integral stadiametric rangefinder. The commander has five TNP-165 vision blocks and a TKN-3V day/night binocular type periscopic sight with integral infrared capability. For day use, this device has a five power magnification at ten degrees field of view, while for night use it has a 4.2 power magnification at eight degrees field of view. A PZU-5 monocular periscopic anti-aircraft sight is also at the commander's position; it is designated PZU-5. The loader is provided with a TNP-165 vision block, and the driver is provided with a TVN-2 or 3 night driving periscope. A OU-3GK infrared/white light searchlight is mounted to the right of the main armament, and another is provided for the commander.

The T.64B incorporates a new fire control suite. Designated 1A33, the system features a new ballistic computer (the 1V517), the two axis stabilized IG42 monocular sight with integral laser rangefinder and the TPN1-49-23 telescopic infrared night sight. The latter sight is operated in conjunction with the L-4A infrared searchlight. The commander has the same TKN-3V day/night periscopic sight with an infrared capability described above. In conjunction with this equipment is the 2Eh36M gun stabilization equipment; this allows the T.64B to fire on the move. The related 9K112 missile system components are integrated with the T.64B fire control suite.

Variants/Upgrades

Production Models. The following is a breakout of the various production models of the T.64:

Ob'iekt 430 - From 1960, this is the original pre-production tank fitted with a developmental 100 millimeter tank cannon fed by an automatic loading system.

Ob'iekt 432 - From 1962, this developmental tank was fitted with the D.68 115 millimeter tank cannon fed by an automatic loading system.

Ob'iekt 434 - From 1964, this tank was a further development of the Ob'iekt 432. This tank is the base tank for the T.64.

T.64 - From 1967; several versions of this tank were manufactured; the differences are minor and relate to the shape of the hull and turret fronts. Armed with the D.68 115 millimeter tank cannon fed by an automatic loading system. Infantry handrails are positioned along each side of the turret and a tool storage box is on the right front fender. This tank is also called the T.64 First Variation. Approximately 600 units were manufactured. About 600 were built with all eventually brought up to T.64A and then B level.

T.64A - Also called Ob'iekt 437, this is an extensively redesigned T.64. Dating from 1969 and first seen in 1970, it is the first serially manufactured model of the T.64 fitted with the 125 millimeter 2A26 cannon fitted with a thermal sleeve. This version of the T.64 was manufactured in large numbers. The automatic loading system was improved, an improved engine fitted, a new fire control suite fitted and the remotely controlled anti-aircraft machine gun added. Smoke grenade launchers were added to each side of the turret as were four spring loaded armor plates (gill armor) to the sides of the tank to protect the running gear. Other improvements include new fording equipment, mounts for the KMT-6 mine plow and a new fire extinguishing system. This tank was also called the T.70 (an inaccurate designation), the "Dvina Tank" (from where it was first sighted) and the T.64 Second Variation.

T.64AK - Dating from 1973, this is the command version of the T.64A. This tank has a demountable antenna, an additional command radio, auxiliary generator and navigation/position equipment.

T.64B - This model of the T.64 represented a major advance in the overall design. Dating from 1976, this tank is also called Ob'iekt 447. Chief among the enhancements of the T.64B is the integration of a modified version of the 2A26 cannon that is compatible with the 9K112 anti-tank guided missile system. Although it is the same caliber as the 2A26 of the earlier versions of the T.64 and fires the same ammunition types, the modified 2A26 of the T.64B can fire the 9M112 Kobra (AT-8 Songster) anti-tank guided missile through its barrel. Since the maximum effective range of the 2A26 cannon firing conventional ammunition is approximately 2,500 meters (2,734 yards), the 4,000 meter (4,734.4 meter) range of the 9M112 missile greatly enhances the tactical flexibility of the T.64 tank. This missile uses command guidance via a radio link; it is fitted with a High Explosive Anti-Tank warhead. The application of our standardized formula to this type of warhead yields an armor perforation figure of 78.75 centimeters (31.0 inches); other sources cite "at least 60 centimeters (23.62

inches). While this type warhead can be defeated by explosive reactive as well as other forms of advanced stratified armor, it is still a very useful system. The T.64B has an L shaped bracket mounted on the turret in front of the commander's hatch; this is for mounting the guidance control box for the 9K112 anti-tank guided missile system. Another major innovation was the integration of a laser rangefinder, and also improved protection for the commander's hatch was provided.

The first version of the T.64B to be openly seen by the West was at a May Day Parade in Moscow in 1985. This tank was designated the T.64 M1981/1 by the United States Army; and it is also called the T.64 Fifth Variation.

T.64BK - This is the command version of the T.64B fitted as the T.64AK described above. This model dates from 1976.

T.64B1 - Also dating from 1976, this is the T.64B without the 9K112 anti-tank guided missile system fitted.

T.64B1K - This is the command version of the T.64B1 fitted as the T.64AK described above. This model dates from 1976. The T.64B1K has also been called the T.64 Seventh Variation.

T.64BM - This model of the T.64 dates from 1983. It is a T.64B fitted with the 6TD six cylinder diesel engine which is rated at 745.7 kilowatts (1,000 horsepower).

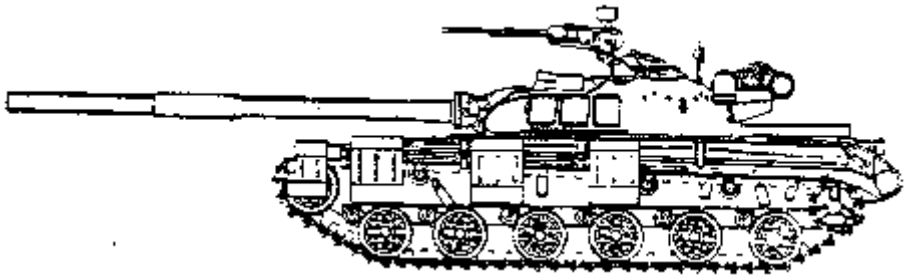
T.64BV - Dating from 1985, this model moves the smoke grenade launchers to the rear of the turret in order to accommodate the installation of explosive reactive armor.

T.64BV1K - This is the command version of the T.64BV fitted as the T.64AK described above. This model also dates from 1985.

T.64R - Dating from 1985, this designation refers to early model T.64 and possibly T.64A tanks brought up to T.64B standard. This tank is fitted with the more recent 2A46-2 tank cannon.

The T.64B inventory was derived from both new production and rebuilds of earlier T.64 tanks.

Variants. There are no known variants of the T.64.



T.64

Source: Forecast International

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