

## ARCHIVED REPORT

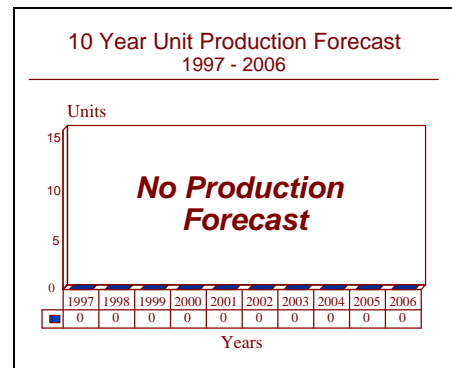
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# SM.240 (2S4) Tyulpan 240 mm Self-Propelled Mortar - Archived 4/98

## Outlook

- The serial production of the SM.240 (2S4) is complete
- A total of 453 Tyulpan systems was manufactured
- Some additional modernization and retrofit potential exists for this system



## Orientation

**Description.** A tracked 240 millimeter self-propelled artillery system

**Sponsor.** The development and procurement of this system was sponsored by the Ministry of Defense of the Soviet Union through the Soviet Army. Continued support is through the Ministry of Defense of the Russian Federation.

**Contractors.** The SM.240 (2S4) was developed and manufactured by the Uraltransmash facility of the former Soviet State Arsenals (now the Uraltransmash State Association) located at Yekaterinburg. The 240 millimeter 2B8 mortar was also developed by the former Soviet State Arsenals (now the Perm Machine Construction Works).

**Licensees.** None

**Status.** The production of the SM.240 (2S4) has terminated. The system is in service with the Russian Federation and other nations.

**Total Produced.** A total of 453 SM.240 (2S4) self-propelled mortars was manufactured.

**Application.** Mobile fire support for the field army at the front and higher levels.

**Price Range.** In equivalent 1991 United States dollars, the unit price of the SM.240 (2S4) was \$1.187 million.

## Technical Data

**Design Features.** An automatic loading system enhances the rate of fire of this system, which remains unique in the world today.

**Crew.** Eleven: six in the self-propelled mortar and five in the accompanying support vehicle.

**Muzzle Brake.** None

**Recoil System.** None, the earth beneath the mortar baseplate absorbs the recoil forces.

**Breech Mechanism.** Open carriage muzzle loaded mortar.

**Ammunition.** High Explosive, High Explosive Concrete Piercing, Nuclear, Submunition Dispensing. This

weapon is also compatible with the Smel'chak laser guided mortar projectile.

**Dimensions.** The following dimensions are based on the last production systems.

	<b><u>SI units</u></b>	<b><u>US units</u></b>
Length overall	7.94 meters	26.05 feet
Width	3.25 meters	10.66 feet
Height	3.2 meters	10.5 feet
Combat weight	27.48 tonnes	30.29 tons
Fuel capacity	500 liters	132.98 gallons
Ordnance caliber	240 millimeters	9.45 inches

**Performance.** The following performance data, especially the range capability of the 240 millimeter 2B8 mortar, are from Russian sources. The mortar maximum range figure is with the nonassisted High Explosive ammunition. Firing the rocket assisted High Explosive Fragmentation projectile, the range is 19 kilometers (20,778.4 yards).

Maximum speed	60 kilometers per hour	37.26 miles per hour
Maximum range	500 kilometers	310.5 statute miles
Step	70 centimeters	2.3 feet
Trench	2.79 meters	9.15 feet
Slope	32%	32%
Gradient	61%	61%
Fording	1.1 meters	3.61 feet
Lower elevation	+50°	+50°
Upper elevation	+80°	+80°
Traverse (left and right)	23°	23°
Maximum ordnance range	9.65 kilometers	10,553 yards
Maximum rate of fire	0.9 round per minute	0.9 round per minute
Sustained rate of fire	0.9 round per minute	0.9 round per minute

**Engine.** The SM.240 (2S4) uses the V-59 diesel engine rated at 387.92 kilowatts (520 horsepower); this engine is provided by the Russian State Factories. The power-to-weight ratio is 14.12 kilowatts per tonne (17.17 horsepower per ton).

**Gearbox.** The SM.240 (2S4) uses an unidentified automatic gearbox provided by the Russian State Factories.

**Suspension and Running Gear.** The SM.240 (2S4) uses a torsion bar type suspension with six dual-tired

road wheels on each side; the drive sprocket is at the front and the rear road wheel acts as the idler. There are four track return rollers on each side

**Fire Control.** The SM.240 (2S4) is an indirect fire weapon that normally receives target data from a forward observer. The fire control solution is then worked out by a central command post and then relayed to the mortar crew and the weapon relayed to the proper position for firing. In addition, the SM.240 (2S4) is equipped with a ID15 laser target marker/ rangefinder.

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