

The Kolomna Design Bureau of Machine-Building (KBM), a prominent entity within Russia's defense industry, specializes in the development and production of missile systems, notably the Iskander-M short-range ballistic missile system. Established in 1942, KBM operates under the umbrella of the state corporation Rostec and has been instrumental in advancing Russia's missile capabilities.

Iskander-M Missile System- Development and Capabilities

The Iskander-M, developed by KBM, serves as a mobile short-range ballistic missile system with a range of up to 500 kilometers. The Iskander missile system, developed by Russia, stands as a pivotal component of its tactical ballistic missile arsenal. Designed to engage a variety of targets with precision, the system has evolved through various iterations to enhance its operational effectiveness.

Development and Variants

The Iskander system encompasses several variants, each tailored for specific operational requirements-

- **Iskander-M-** This primary version employs the 9M723 ballistic missile, boasting a range of up to 500 kilometers and a payload capacity of 700–800 kilograms.
- **Iskander-K-** Equipped with the 9M728 cruise missile, this variant achieves a range of approximately 490 kilometers.
- **Iskander-E-** Designed for export, it features a reduced range of 280 kilometers and a payload of 482 kilograms.

Designed to replace the older OTR-21 Tochka systems, the Iskander-M boasts several advanced features.

- **Warhead Versatility-** Capable of carrying various conventional warheads, including cluster munitions, fuel-air explosives, high-explosive fragmentation, earth penetrators for bunker busting, and electromagnetic pulse devices for anti-radar missions. It also can be equipped with nuclear warheads.
- **Guidance and Accuracy-** Employs an inertial guidance system complemented by optical Digital Scene Matching Area Correlation (DSMAC) and can integrate GPS/GLONASS for enhanced accuracy, achieving precision within 5 to 7 meters.
- **Mobility and Deployment-** Mounted on transporter-erector-launcher (TEL) vehicles, the system offers rapid deployment capabilities, with launch preparation times as short as four minutes from highest readiness.

Operational Use and Export

The Russian Armed Forces have actively deployed the Iskander-M in various conflicts, including the 2008 Russo-Georgian War, the Syrian Civil War, and the 2022 invasion of Ukraine. The system's ability to evade missile defenses and deliver precise strikes has been a significant asset in these operations. In addition to domestic use, Russia has exported the Iskander system to several countries-

- **Armenia-** Acquired around 25 units, with systems publicly displayed during military parades.
- **Algeria-** Operates multiple regiments of the Iskander-E variant, totaling approximately 48 launchers.
- **Belarus-** In 2022, Belarus announced the purchase of Iskander systems, including versions capable of carrying nuclear warheads.

Leadership and Sanctions

KBM's leadership plays a crucial role in its operations and strategic direction-

- **Valery Mikhailovich Kashin-** Serving as the General Designer, Kashin has been associated with KBM since 1974, ascending through various roles to his current position. He holds memberships in the Russian Academy of Sciences. The United States has sanctioned Kashin, though other international sanctions are not documented.
- **Sergey Viktorovich Pitikov-** Appointed as General Director in 2022, Pitikov has not been subjected to sanctions by the United States, European Union, or the United Kingdom. Notably, his daughter resides in Sweden, highlighting personal ties beyond Russia's borders. [reuters.com](https://www.reuters.com)

While the United States has imposed sanctions on KBM, targeting its involvement in missile development, the European Union and the United Kingdom have not extended similar measures to the company or its executives. This discrepancy underscores a lack of uniformity in international sanctions policies concerning entities within Russia's defense sector.

Production Facilities and Expansion

KBM's primary operations are based in Kolomna, Moscow Oblast, with several key facilities-

- **Headquarters and Main Production-** Located at Oksky Prospekt 42, encompassing design, assembly, and administrative functions.

- **Testing Site-** Situated near the village of Shchukovo (Akatyev), this area spans approximately 3,580 hectares and includes specialized testing infrastructure.

Between 2017 and 2022, KBM initiated modernization efforts, including upgrading testing sites and constructing new production facilities, particularly for manufacturing cable products. Despite official claims of completion, satellite imagery from December 2022 indicates the absence of new visible structures, suggesting potential delays or misreporting in development projects.

Strategic Implications

KBM's development and production of the Iskander-M missile system significantly enhanced Russia's tactical and strategic military capabilities. The system's precision, mobility, and versatility provide the Russian military with a robust platform for rapid response and deterrence. However, the inconsistent application of international sanctions on KBM and its leadership reflects a fragmented approach to curbing the proliferation of advanced missile technologies. This inconsistency may undermine the effectiveness of broader efforts to constrain Russia's military advancements.

KBM's role in advancing missile technology, particularly through the Iskander-M system, positions it as a pivotal entity within Russia's defense industry. The company's leadership, production capabilities, and international interactions warrant continuous monitoring to assess their impact on regional and global security dynamics.

Specification	Iskander-M (9M723)	Iskander-K (9M728)	Iskander-K (9M729)	Iskander-E (9M723E)
Type	Quasi-ballistic missile	Cruise missile	Cruise missile	Quasi-ballistic missile
Length	7.28 meters	7.2 meters	7.2 meters	7.28 meters
Diameter	0.92 meters	0.514 meters	0.514 meters	0.92 meters
Launch Weight	4,615 kg	1,700 kg	1,700 kg	3,800 kg
Warhead Weight	700–800 kg	480 kg	480 kg	480 kg
Range	Up to 500 km	Up to 500 km	Up to 2,500 km	Up to 280 km
Guidance System	Inertial with optical terminal guidance	TERCOM and DSMAC	TERCOM and DSMAC	Inertial guidance

Specification	Iskander-M (9M723)	Iskander-K (9M728)	Iskander-K (9M729)	Iskander-E (9M723E)
CEP (Accuracy)	5–7 meters	5–7 meters	5–7 meters	30–70 meters
Propulsion	Single-stage solid propellant	Turbojet engine	Turbojet engine	Single-stage solid propellant
Flight Altitude	Up to 50 km	6 km	6 km	Up to 50 km
Speed	Mach 6–7	Subsonic	Subsonic	Mach 6–7
Warhead Types	High-explosive fragmentation, cluster munitions, fuel-air explosive, earth penetrator, EMP, nuclear	High-explosive fragmentation, nuclear	High-explosive fragmentation, nuclear	High-explosive fragmentation
Launch Platform	Mobile TEL	Mobile TEL	Mobile TEL	Mobile TEL

Additional Insights from Russian Sources

Russian-language sources provide further details on the Iskander-M system-

- **Operational Flexibility-** The Iskander-M can launch missiles independently, allowing for rapid response to emerging threats.
- **Countermeasure Capabilities-** The missile's design includes features to evade enemy missile defense systems, such as maneuverability during flight and the deployment of decoys.
- **Deployment and Mobility-** Mounted on a mobile transporter-erector-launcher (TEL), the system ensures quick relocation and reduced vulnerability to counterattacks.
- **Guidance Enhancements-** The integration of GLONASS satellite navigation with the inertial guidance system enhances targeting accuracy.

Operational Use

The Iskander system has been deployed in various conflicts-

- **Russo-Georgian War (2008)-** Georgia reported the use of Iskander missiles during the conflict.

- **Syrian Civil War**- Russia deployed Iskander systems to its Hmeimim airbase in Syria, as reported by Russian media.
- **Nagorno-Karabakh Conflict (2020)**- Armenia reportedly used Iskander missiles during clashes with Azerbaijan, as stated by Armenian officials.

International Operators

Several countries have acquired the Iskander system-

- **Armenia**- Possesses Iskander systems, as confirmed by Armenian defense officials.
- **Algeria**- Operates Iskander-E systems, according to Russian defense sources.
- **Belarus**- Announced the acquisition of Iskander systems, as reported by Belarusian state media.

Strategic Implications

The Iskander missile system enhances Russia's tactical and strategic military capabilities. Its precision, mobility, and versatility make it a formidable tool in modern warfare, capable of delivering various warhead types to a range of targets. The system's deployment in multiple conflicts underscores its operational value and significance in Russia's defense strategy.