

Russians fire ballistic missiles into Georgia

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Russia has fired 15 SS-21 short-range ballistic missiles at Georgian military targets since Aug. 8, Washington-based U.S. officials have told Aviation Week, although the missiles' effectiveness has not been assessed.

The officials also say a mix of Su-25, Su-27 and Su-24 strike aircraft and Tu-22M3 bombers have established "air superiority, but not air supremacy over Georgia" -- referring to the effectiveness of Georgian air defenses. (See related story p. 1.)

Low-key U.S. military assessments as of Aug. 11 assign some blame to the Georgians for an earlier, seemingly suicidal initial push into South Ossetia, and citing an apparent disregard for Russian air superiority and the ability to assemble and launch an overwhelming strike force. One possibility, officials say, is that the Georgians hoped to take advantage of Russian Prime Minister Vladimir Putin being in China for the Olympics, and present him with the fait accompli of an occupation on his return.

But the effort has foundered as "Georgian command and control broke down" almost immediately after the initial foray, a senior U.S. defense official says. "We don't know if it was because of Georgian military incompetence or the result of an effective electronic and cyberattack by the Russians."

Cyberwarfare is being waged against official Georgian government Web sites by unidentified hackers who have taken over sites and disrupted networks. In one instance, the Web site for the office of Georgian foreign affairs apparently was hacked and in its place were images depicting Georgia's president as a Nazi.

U.S. analysts estimate are that there are up to 10,000 Russian troops in South Ossetia supported by 150 T-62 and T-72 tanks and 100 pieces of artillery.

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SS-21 SCARAB 9K79 Tochka FROG-7 Luna
[/youtube}VeRzHyFX68M{/youtube}](http://www.youtube.com/watch?v=VeRzHyFX68M)

The SS-21 SCARAB (9K79 Tochka) single-stage, short-range, tactical-ballistic missile is transported and fired from the 9P129 6x6 wheeled transporter erector launcher. It is supported by a tactical transloader (9T218) and a 9T238 missile transporter trailer towed by a ZIL-131 truck. The 9P129 TEL crew compartment is in the forward section and the missile compartment behind. During transport the missile is enclosed with the warhead in a temperature-controlled casing.

The SS-21 SCARAB missile (9M79) has a maximum range of 70 km and a CEP of 160 meters, while the improved composite propellant 9M79-1 (Tochka-U) has a maximum range of 120 km. The basic warhead is the 9N123F HE-Frag warhead which has 120 kg of high explosives. The 9N123K submunition warhead can probably carry either bomblets or mines. The SS-21 can also carry the AA60 tactical nuclear warhead. Other warheads are believed to include chemical, terminally guided warhead, and a smart-munition bomblet warhead. In 1981, the SS-21, a guided missile (providing improvement in both range and accuracy), began replacing the FROG in forward-deployed divisions, and 140 are were deployed as of 1988. Division-level SS-21 battalions were being consolidated into brigades in Soviet armies in East Germany.

 SS-21 A

Country: Russian Federation

Alternate Name: Scarab A, OTR-21, Tochka

Class: SRBM

Basing: Road mobile

Length: 6.40 m

Diameter: 0.65 m

Launch Weight: 2000 kg

Payload: Single warhead, 482 kg
 Warhead: Nuclear 10 or 100 kT, HE, chemical
 Propulsion: Single-state solid
 Range: 70 km
 Status: Operational
 In Service: 1976

Details

Russian Designation: OTR-21 Tochka

The SS-21 is a battlefield short-range, road-mobile, solid propellant, single-warhead ballistic missile designed for tactical deployment. It was designed as a replacement for the Free Rocket Over Ground (FROG) missile series. It is believed to be capable of being launched in either a ballistic or cruise missile mode. The ballistic mode provides an increased range and speed, but the cruise mode allows for stealth and higher accuracy. Two versions are confirmed to have been developed, the 'Scarab A' and the 'Scarab B'.

The SS-21 A is a tactical system designed to be deployed alongside conventional forces. The combination of its multiple warhead options, its cruise flight profile and the mobility of its Transporter-Erector-Launcher (TEL) vehicle make the SS-21 A an extremely flexible battlefield system. The system is effective against military units and troop concentrations using fragmentation and submunition warheads, while it can just as effectively disable electrical equipment, airfields and military facilities using its other warhead options. In this way, it can both destroy enemy forces and degrade the ability of the enemy to engage in combat. The system is also designed to provide tactical nuclear support on the battlefield. The yield on the nuclear warhead is not insignificant and is fully capable of inflicting heavy damage to military units and facilities. If deployed with a low yield nuclear weapon, the missile would be capable of destroying hardened targets. The SS-21 A provides the Russian armed forces with an effective conventional and nuclear support system.

The SS-21 'Scarab A' has a range of 70 km (43 miles) with an accuracy of 150 m CEP. It launches a 482 kg warhead which can be equipped with submunitions, 120 kg of high explosive (HE) fragmentation filling or a nuclear device. The submunition types are anti-tank, anti-personnel and anti-runway, while the nuclear device is believed to have a selectable yield of 10 or 100 kT. It uses an inertial guidance system. The missile is 6.4 m long, 0.65 m in diameter and has a launch weight of 2,000 kg. It uses a single-stage solid propellant engine.

The SS-21 A TEL vehicle is amphibious with the ability to drive 60 km/h (37 mph) on road and 8 km/h (5 mph) in water. It has the capacity of driving over rough terrain and carries a crew of three. It has Nuclear, Biological and Chemical (NBC) filter systems enabling it to operate in areas where Weapons of Mass Destruction (WMD) have been deployed. This is important, due to the threat of non-conventional warfare on the modern battlefield.

Unconfirmed reports claim the existence of a second upgrade, the SS-21 'Scarab C'. This missile would have an increased range of 185 km (115 miles) and would fit two missiles to a TEL vehicle. These reports could possibly be referring to the reload vehicle for the SS-21 A/B or the next generation tactical ballistic missile, the SS-X-26.

The SS-21 A missile was in development from 1968 until 1974, and entered service in 1975. The SS-21 B was developed between 1984 and 1988, and entered service in 1989. It is believed that Russia currently possesses 300 TEL vehicles and 310 nuclear warheads for all versions of the SS-21, though all SS-21 A's have possibly been taken out of service. This is down from a 1993 peak of 1,200 missiles. In 1996, a life extension program was started to add another ten years to the original 15 year service life of the SS-21 B, with the first refit flight test occurring in October 1999.

An unconfirmed report alleges that Syria exported a small number of SS-21 missiles and their TEL vehicles to North Korea in 1996 for the purposes of reverse engineering. It is believed that in 1999 the Russians used 60 to 100 SRBM in Chechnya, the majority of these being SS-21 missiles. The Ukraine is reported as possessing 500 missiles, and around 80 have possibly been exported to Yemen and another 40 (along with 12 TEL vehicles) to Syria.(1)

Footnotes

Duncan Lennox, Jane's Strategic Weapons Systems 46 (Surrey: Jane's Information Group, January 2007), 134-136.