



YEFREMOV: THE WEAPONS DESIGNER WHO OUTWITTED THE PENTAGON

RIAN.RU

RUS ENG DEU FRA ARA PER ESP SR JPN CHN(S) CHN(T)

search

01:30

19/10/2006

MOST POPULAR ARTICLES

- Ukraine illegally sells arms to Georgia - party leader
- Who can Europe-based missiles threaten?
- European satellite launch by Russian rocket delayed by 1 day
- Putin proposes establishing national research centers in Russia
- Europe, Armenian genocide, and Turkey



Opinion & analysis

Unique surface-to-air missile baffles foreign military diplomats in Egypt

16:32 | 18/10/2006



MOSCOW. (RIA Novosti military commentator Viktor Litovkin) - A military parade was held in Cairo to mark Independence Day on July 29. Three-axle trucks, each carrying two missiles inside sloping bodies, rolled by the VIP grandstands.

These missiles did not look like any other known shorter- or intermediate-range missiles. Their pointed warheads and four rows of fins on each stage closely resembled the well-known S-125 Pechora (NATO reporting name, SA-3 Goa) surface-to-air missile (SAM) system, which took part in several Egyptian-Israeli wars and reportedly downed dozens of enemy aircraft.

The stationary S-125 SAM was mounted on special platforms, rather than trucks, and had four launching rails, whereas the one displayed in Cairo featured two guiding rails.

Foreign military attaches did not expect the Egyptian military to show off such obsolete equipment, even if out of mere respect.

But the military attaches were wrong. The Egyptian army now wields brand-new Pechora-2M SAMs, "grandchildren" of the good old S-125, which knocked down nearly 4,000 U.S. aircraft in Vietnam and even one F-117 Stealth Fighter during the 1999 war against Yugoslavia.

Some countries, which cannot afford to replace the S-125 with the more advanced S-300PMU SAM system, opt to upgrade it in line with modern standards and objectives because of substantially lower costs.

The Russian-Belarusian financial-industrial group Oboronitelye Sistemy (Defensive Systems) overhauled the S-125 SAM system on orders from Egypt and renamed it as the S-125 Pechora 2M. This R&D project can be compared to a quantum leap, of sorts.

The Soviet Union supplied S-125 SAMs to 35 world and seven CIS countries. However, Oboronitelye Sistemy first decided to modernize the weapons owned by the Egyptian army, after winning an international tender, which was announced by Cairo in 1999, and which also involved Poland and Belarus.

But the Russian offer turned out to be more attractive, and the combat efficiency of the Pechora-2M was better than that of other systems. In fact, the Pechora-2M has outperformed its forerunner.

Viktor Vashchuk, deputy CEO of Oboronitelye Sistemy, said the Egyptian contract was a real breakthrough for his company and for Russia, because military-technical cooperation with Egypt had been frozen for nearly a decade after the Soviet Union's break-up.

Spartak Narbikov, PhD, Oboronitelye Sistemy chief engineer, explained the difference between the S-125 and the Pechora-2M. It took over three hours to transport the stationary S-125 launcher from one firing position to another, but the mobile

ONLINE NEWS

OPINION & ANALYSIS

WORLD

G8

RUSSIA

BUSINESS

SPORTS

SOCIETY

SCIENCE & TECHNOLOGIES

CULTURE

IMAGE GALLERIES

OFFICIAL RUSSIA



topics

- N. Korean nuclear issue
- Sakhalin II dispute
- Kremlin Cup
- Putin visits Germany
- Russian sanctions against Georgia
- Russian Navy modernization

other topics >>

more

RIA NOVOSTI

PHOTOSERVICE

FEEDBACK

REFERENCE

LETTERS TO THE EDITOR

PRODUCTS AND SERVICES

CONTACTS

CAREERS



Pechora-2M with the 5P73 index can change positions in just 20-25 minutes. Enhanced maneuverability contributes greatly to combat survivability, because approaching enemy aircraft can promptly attack exposed SAM launchers.

A state-of-the-art elements base is another crucial difference. Unlike the older S-125 system, which featured lamp electronics, solid-state and digital units account for 90% of the Pechora-2M's electronic network. The service life of advanced microprocessors has increased from 30-40 to 2,000 and even 10,000 hours. Moreover, the new jam-resistant system can successfully cope with enemy ECM (Electronic-Counter-Measures) systems and missiles.

Experts recall that the United States had used Shrike anti-radar missiles against targets in Vietnam. But things have changed since then, and even the sophisticated HARM anti-radar missile is unable to hit Pechora-2M aerial posts because they simply vanish off the screen. Unlike its predecessor, which had a 26-km range, the new SAM system can hit enemy aircraft 35 km away.

The Pechora-2M features an optronic network consisting of one TV channel and one thermal imaging channel. This network makes it possible to attack and destroy aerial targets day and night in conditions of radio-electronic warfare. Consequently, the Pechora-2M can hit F-16 fighters at 30-km ranges and larger aircraft at a range of up to 35 km.

The Izhevsk-based electromechanical plant Kupol and the Ulyanovsk mechanical plant, which are part of the Almaz-Antei Air Defense Concern, turn out revamped Osa-AKM, Tor-M1 and Buk-M1-2 SAM systems with similar optronic networks for the Russian army. These weapons have other ECM-protection systems.

Pechora-2M systems feature more powerful and effective missiles with the 5V27D and 5V27DE index. They have more advanced radio proximity fuses and warheads. Improved missile-guidance methods and the propulsion unit's higher power-to-weight ratio also deserve mention.

The MKB Fakel machine-building design bureau near Moscow manufactures these missiles and their 5V27DE equivalents. The latter feature heavier solid-propellant boosters for higher speed, range and hitting power. Only two, rather than four, missiles can now be launched. However, this will not impair the system's combat efficiency because each warhead now contains 270% more fragments, whose weight has increased 60%. The radio proximity fuse, which is activated 20 meters from the target, leaves no chance for any enemy aircraft, shorter- or intermediate-range missile. Fragmentation patterns make it possible to destroy the target's vital elements and missile warheads even at high angular speeds. Consequently, all targets flying at up to 750 meters per second cannot escape. This remarkable achievement makes older SAM systems obsolete.

The Pechora-2M, which can effectively hit incoming targets, uses new 5V27D and 5V27DE missiles, as well as the older 5V27 missiles.

Oboronitelnye Sistemy experts said their new invention was capable of firing any kind of ammunition. This is very important because foreign armed forces, including the Egyptian army, have many unspent missiles.

The new system's aerial and command posts are located up to 300 meters from missile launchers. Commanders relay orders via telecode and optronic communications networks, which shield telecommunications and combat-control equipment from enemy ECM systems and enhance personnel survivability in case of air strikes.

Viktor Vashchuk said the S-125 Pechora-2M SAM system could destroy any aerial target. Unlike other similar weapons, it is particularly effective against low-flying and small targets.

Other countries have asked Vashchuk's company to upgrade their S-125 SAM systems. The Military Balance, an annual report published by the International Institute for Strategic Studies in London, says Myanmar, Cuba, Peru, Slovakia, Vietnam, Syria, Libya, Bulgaria and India all have about 500 such systems, 200 to 250 of which can be overhauled. This means that Oboronitelnye Sistemy will have a lot of work in the foreseeable future.

However, Egypt became the first country to receive the first revamped Pechora SAMs, which reliably guard its air space.

REGNUM

Referendum on independence of South Ossetia to be held in November

Georgian military to be trained under Estonian operations simulator

Fog caused collisions of tens of vehicles in Krasnodar

