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Syria, Russia, and the S-300: Military and Technical Background

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Concern that Russia intends to provide Syria with advanced S-300 anti-aircraft missile systems was one of the reasons for Prime Minister Netanyahu's visit to Russia last week.

The S-300 system (or in its Western name, SA-10 Grumble) is an advanced surface-to-air missile system made in the USSR / Russia. Its development began in the 70s as a result of lessons learned from the Yom Kippur and Vietnam Wars. It was intended as an "access denial" system, and as such has extended capabilities and range. The system entered into service in the Soviet air defense service (Voyska PVO) and is today used by the Russian air force.¹

In the early 90s, significant improvements were added to the system, which was renamed the S-300 PMU, followed by the S-300 PMU-2 Favorit (this system was awarded a separate NATO label – SA-20 Gargoyle).² The improvements included modifications of all the components – radars, control systems, and interception missiles. The current system has good capabilities up to a range of 200 km, as well as good capabilities against low flying aircraft, and in the latest models even against surface-to-surface missiles. It is today in service in the Russian military (about 1,900 launchers) and the Chinese military³.

An S-300 battalion generally includes several components: engagement radar, detection radar for long ranges, low altitude detection radar, command center, and several launchers (up to 8 launchers). Each of these components is installed on a wheeled vehicle. Several types of interception missiles were developed for this system.

Syria's interest in acquiring long range anti-aircraft missile systems is not new. Already in the late 80s, in the wake of the first Lebanon War, Syria was eager to obtain long range air defense systems. It received the S-200 system (known in the West as SA-5 Gammon). They supplied long range defense but they are static, heavy – and obsolete.

Reports about a possible large arms deal amounting to \$5 billion between Russia and Syria surfaced in 2007. These deals were said to include fighter aircraft, anti-tank missile systems, and various types of surface-to-air missile systems, including the S-300. No details were released and it was not clear whether these deals were indeed signed. Nevertheless, Israeli Prime Minister Ehud Olmert asked the Russian government to refrain from selling the S-300 system to Syria. It seemed then that Russia complied with the request since the system was never delivered, although other air defense systems – such as the Pantsyr-S1 system (a short range mobile air defense system, for protection of mobile forces and point targets) – were delivered in 2009.

Unlike the deal with Syria, which was never publicly announced, a parallel deal for sale of S-300 systems to Iran was made public and led to much international pressure on Russia, which ultimately, in 2010, suspended the deal (claiming that the sanctions voted by the Security Council on Iran were the reason for the suspension).

Since the outbreak of the upheaval in Syria in 2011, Russia has supported Bashar al-Assad and provided his regime with advanced equipment, including the Bastion coastal defense systems (equipped with the Yakhont supersonic missile) and the mobile air defense system Buk-M2 (Western name – SA-17) that were delivered in 2011. Last week's reports, including statements by senior Russian officials, indicate that there was indeed a contract for the S-300 systems (according to some sources, the deal was for 6 launchers and 144 missiles), and that today Russia is prepared to supply the system.

At this point, a few questions are in order. First, why does the Assad regime need the system especially now? Second, is the Syrian military able to undertake the logistical-operational effort of integrating the system? Third, is Russia indeed ready to supply the systems now?

Regarding Syria's motivation to receive the system, it seems that the recent attacks in Syria that according to foreign news services were conducted by Israel – in January 2013 and earlier this month – have demonstrated Assad's vulnerability. Assad, while of late scoring some success in his combat against the rebels, needs guarantees against the type of foreign intervention that caused the downfall of Qaddafi in Libya. From the start of the events in Syria in 2011, Israel refrained from any action within the Syrian territory, as did all other external parties (the US, NATO, Turkey). Now, however, the chances of foreign intervention in Syria – against the regime – have increased. A request for the air defense systems signals that Syria has a much better air defense than the Libyan systems and that Russia stands firmly behind it.

It is doubtful whether the Syrian military is currently able to absorb the systems. Integration of a system such as the S-300 requires a significant and prolonged investment to learn the system, establish facilities for operation and maintenance, and create and train operating units. It is highly questionable whether in its current state the Syrian military is able to invest the required manpower and resources for this purpose. Furthermore, it is doubtful that it will be able to secure the systems upon their arrival against an attack by the rebels.

There is a concern, however, despite its low probability, that Assad might transfer the systems to a safer place and to loyal hands, i.e., Hizbollah. Hizbollah would be able to send people to Russia to learn the system and can find a safe place for it within Lebanese territory, out of the rebels' reach. From Israel's point of view, such a development would be extremely serious.

At this stage, it is hard to know if Russia indeed intends to complete the deal and transfer the systems to Syria (with the knowledge that the systems might be entrusted to Hizbollah, exactly as the Syrians intended to transfer the Buk-M2 systems) or if the moves of the last weeks are idle steps, intended to emphasize – at the rhetorical level – Russia's determination of to continue to support the Assad regime and send a message to Israel that continuing the attacks in Syria will exact a heavy price. The only option for immediate deployment and operation of the system in Syria is the Egyptian model of the 70s, namely, delivery of the system with Russian operators. It is hardly likely that the Russians would go as far as endangering their soldiers and expose them both to the rebels' aggression and to a third party challenge.

¹ The S-300 system is not to be confused with the S-300V (Western name of the SA-12 Gladiator/Giant), which was developed in parallel but separately for the Soviet land forces.

² All the designations mentioned here apply to the export versions of the system, which are the subject of this article.

³ A further version, S-300 PMU-3 was renamed, and is marketed today as the S-400 Triumf (NATO code name SA-21 Growler).