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If Its Syria: Syrian Military Forces and Capabilities

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It is far from clear that the US has any intention of going to war with Syria, but it may be useful to have a summary of Syrian military capabilities.

Underfunded, Obsolescent Equipment, and Low Grade Manpower

In order to understand Syrian forces, it is necessary to understand that Syria first created a vastly inflated force structure with soviet aid after 1973, and then sought military parity in force numbers with Israel after 1982, It was never able to match its force numbers with adequate manpower quality, however, and the fall of the Soviet Union deprived it of the arms aid and arms loans necessary to sustain its force numbers. Syria also made little effective use of the aid it received during the Gulf War, wasting most of it on adding to its armored force and air force numbers, rather than improving overall force quality.

According to the CIA, Syria reports annual defense expenditures of under $1 billion a year, although this almost certainly badly understates actual spending. This is equivalent to roughly 6% of its GDP. There are no reliable data on the break out of Syrian military expenditures, but it is clear than Syrian force modernization has lagged badly behind Israel for more than a decade.

US intelligence sources estimate that Syria only signed $300 million worth of new arms control agreements during 1994-1997, versus $4.7 billion for Israel and $4.8 billion for Egypt. Syria only signed $500 million worth of new arms control agreements during 1998-2001, versus $2.5 billion for Israel and $2.6 billion for Egypt. Because it has been unable to pay its past arms debts to Russia, it has not been able to get extensive resupply from Russia or credit from other countries. During 1994-1998, most of its new arms orders have been placed in Western and Eastern Europe.

Total Syrian arms deliveries during 1994-2001 totaled only $700 million versus $6.9 billion for Israel and $9.1 billion for Egypt.

The modernization that has occurred has been badly mismanaged because Syria continues to try to support a force structure at least one-third larger than it has the resources to make effective.

Syria also has failed to modernize the training of its officers and relies heavily on poorly trained conscripts. Like many of the forces in the developing world, it lacks an effective cadre of non-commissioned officers and its officers often refuse to do the menial work of NCOs.

This combination of inadequate equipment and manpower is not atypical of Arab forces, but it is compounded by a static defensive approach to exercises and force planning and garrison duty in Lebanon that has led to widespread corruption in the Syrian military forces. Syrian readiness standards are poor, as is maintenance, and large amounts of army, air, and naval equipment are not combat capable, or have limited sustainability in combat.

Syria Force Numbers and Force Strength

Syria does retain a large force structure for a power of its size. Its total forces have 319,000 men – roughly similar to that of Iraq -- and it has a reserve pool of 354,000 men. (280,000 army, 4,000 navy, and 70,000 air force.

There is an 8,000-man paramilitary Gendarmerie. The Ba'ath Militia or People's army has a nominal strength of 100,000, but is little more than a military practical joke.

Syrian Army

The army has some 215,000 men. It is organized into three corps with a total of seven armored divisions, three mechanized divisions, one Republican Guard division, and three Special Forces brigades organized into a nominal division. It has four independent infantry brigades, one border guard brigade, and two independent artillery brigades. There is an independent tank regiment, and 10 Special Forces regiments.

Although overall force quality is low, Syrian special forces units are often effective, and at least two armored divisions the Republican Guards division, and one mechanized division have moderate to good readiness.

The army has thee surface-to-surface missile brigades: One Scud, one SS-21, and one FROG. There is a coastal defense brigade with Styx and SS-C-1B Sepal missiles. The Syrian inventory of North Korean No Dong missiles and launchers is unclear. It has 18 FROG-7 launchers, 18 SS-21 launchers, and at least 26 Scud B and C launchers, plus 6 SS-C-3 Styx launchers and 4 SSC-1 Sepal launchers. The IISS estimates a total of 850 surface-to-surface missiles.

Syria has long emphasized armor over balanced combined arms. It has some 4,700 tanks, although 1,200 are embedded in static defensive positions. Another 2,000 of the rest are obsolete T-55.Mvs, and 1,000 are obsolescent T-62s, Syrian does, however, have 1,700 moderately effective T-72/72Ms. Syrian tank upgrade programs have been largely ineffective.

Syria has 600 BRDM-2 and 125 BRDM-2 Rkh obsolescent armored reconnaissance vehicles. It has 2,000 BMP-1 obsolescent armored infantry fighting vehicles, but also has some 200-350 more modern BMP-2s and BMP-3s. It also has some 1,600 obsolescent BTR-50/60/70/152 armored personnel carriers.

Syrian armored exercises are slow moving and have poor combined arms content. There is almost no joint warfare training – perhaps because the Syrian air force is not seen as survivable. Syria's use of attack helicopters is more effective, but equipment and tactics have not been well modernized since the early 1980s. The Syrian Air Force has 90 attack helicopters: 48 Mi-25s and 42 SA-342Ls.

Syria does have a better fleet of self-propelled artillery weapons than Iraq. These include 400 122mm Type 2S1s and 50 152mm 2S3s. Like Iraq, however, it relies largely on towed artillery and has a total of some 1,600-1,700 weapons. These are largely 122mm, 130mm, and 152mm weapons. Syria also has 200 Type 63 107mm, and 280 BM-21 122mm, multiple rocket launchers. It has some medium and heavy 700 mortars.

This artillery strength gives Syrian considerable firepower, and much of this equipment has relatively long ranges. Syria relies heavily on static massed fires, however, and lacks the ability to rapidly shift fires, target weapons effectively beyond line of sight, maneuver artillery rapidly, and make effective use of adequate counterbattery radars and targeting systems.

The army has massive assets of anti-tank weapons, including some 3,500 obsolescent AT-3 Saggers, with 2,500 mounted on armored vehicles, it has some 350 more modern AT-4 and AT-5s, and over 2,000 relatively modern AT-10 and AT-14 Kornets. It also has 200 French-made Milans.

It has some 2,050 anti-aircraft guns, including 400 radar-guided ZSU-23-4s. It has some 4,000 obsolete manportable SA-7 surface-to-air missiles and some 20 more modern SA-9s and 35 SA-13s.

Syrian Air Force

The Syrian air force has some 40,000 men, some 611 combat aircraft, and the 90-armed helicopters referred to earlier. Many of its aircraft are not combat operational, however, and Syrian pilot training is often little more than a joke. Syrian pilots average roughly 30 flight hours per year and the training for all but senior pilots is unrealistic and more than a decade out of date. It has not advanced much beyond its capability in 1982 when some 80 Syrian pilots were sent to a pointless death in missions against the Israeli air force.

Its attack forces total 10-11 squadrons. They include 20 Su-24s and possibly 14 MiG-29 SMTs, These are capable, if somewhat dated, aircraft with some capability to deliver modern precision guided weapons. The bulk of its attack forces consist of 90 Su-22s and 44 MiG-23Bns -- aircraft with limited capability to deliver precision or unguided weapons with accuracy. Iraq does have reasonably effective AS-11, AS-12, and AS-14 air-to-surface missiles, but nothing approaching the quality of modern US systems.

Its air defense forces total 16 squadrons. Roughly half, however, use some 170 aging and obsolete MiG-21s. Another 5 squadrons use some 90 MiG-23s, which lack the radar capability for modern air-to-air combat. The only semi-modern aircraft include 30 MiG-25s, with limited look-down/shoot-down capability and 22 MiG-29s with avionics now some 15 years old.

There are six MiG-25R and 8 MiG-21 H/J reconnaissance aircraft with aging sensors of limited capability. The are no airborne warning and control platforms or modern intelligence and targeting platforms and only limited numbers of UAVs.

The rest of Syria's air force consists of a large pool of training and transport aircraft.

Syrian exercises reveal poor planning for close air support and interdiction missions with little evidence of capability for joint warfare and an emphasis on bombing methods that can only be effective – if then – if the defending air force is weak and Syria can use chemical weapons or sustained area bombing. The air defense tactics show poor coordination with the surface-based defense force and a reliance on outdated ground-controlled intercept systems.

Syrian Air Defense

Like many Arab states, Syria has a large inventory of now obsolete surface to air missile that are supported by aging radars and an obsolete command and control and battler management system. Its 60,000 man Air Defense Command is one of the largest elements of its military forces, and it has two Air Defense Divisions, 25 Air Defense Brigades, and a total of some 150 surface-to-air missile batteries.

The core of its forces include 600 SA-2 and SA-3 launchers, and 200 Sa-6 launchers. The SA-2 and SA-3 have had limited upgrades, but are vulnerable to electronic countermeasures and are relatively static and easy to target. The SA-6 is tracked and mobile, but is obsolescent and vulnerable to countermeasures. All are vulnerable to anti-radiation missiles.

Syria has 48 long-rang SA-5s, but these are slow moving and obsolete systems that are useful more for driving fixed wing propeller sensor aircraft away from Syrian airspace than effective air defense.

Syria has some 60 more modern, short/medium range SA-8 surface-to-air missiles.

There are some 4,000 anti-aircraft guns placed to provide curtain-fire defense at low altitudes of key facilities.

No air defense system this large can be disregarded, and it can be highly lethal where its major surface-to-air systems have overlapping coverage and present a threat because of sheer numbers. Syrian exercises do not, however, reveal the sophistication and readiness Iraq showed before the Iraq War, and the Syrian C4I/BM system is outdated and have several critical vulnerabilities well known to Syria's potential opponents.

Syria realizes these weaknesses, and has sought the Russian S-300 surface-to-air missile and modern Russian air defense for more than a decade. Only a total system upgrade of this kind can make Syrian defense effective but no elements of such a system have yet been delivered.

Syrian Navy

Syria has a 4,000 man navy that is large obsolete and which has poor readiness and training standards. It has two semi-operational Petya-III class guided missile frigates. Its obsolete submarine force has been deactivated because its ships became little more than maritime death traps. It has 18 patrol craft, including 10 obsolete OSA I and II class vessels with Styx missiles. It does have 5 mine warfare craft and 16-armed ASW helicopters, and three Polnocny medium class amphibious ships with a lift capacity of 100 troops. Syria has little or no capability, however, for amphibious landings and warfare.

Syrian Weapons of Mass Destruction

Syria is keenly conscious of the fact its force structure has limited effectiveness and has tried since the early 1970s to develop weapons of mass destruction as a deterrent to Israel and an equalizer to Israel's possession of nuclear weapons. The data on Syrian missile systems and weapons of mass destruction are somewhat uncertain, and little is known about Syrian war fighting plans to use the,. However, the following list of developments gives a reasonably accurate picture of its capabilities. They are excerpted from a new report on weapons of mass destruction in the Middle East that will be up on the web on Tuesday at www.csis.org.

Delivery Systems

Reports on Syrian delivery systems provide the following picture of Syrian capabilities:

- ·Four SSM brigades: 1 with FROG, 1 with Scud Bs, 1 with Scud Cs, and 1 with SS-21s.

- ·Has 18 SS-21 launchers and at least 36 SS-21 missiles with 80-100 kilometers range. May be developing chemical warheads.

- ·According to the May 1998 estimate of the Center for Nonproliferation Studies at the Monterey Institute of International Studies, Syria possessed 200 SS-21 Scarab missiles.

- ·Some experts believe some Syrian surface-to-surface missiles armed with chemical weapons began to be stored in concrete shelters in the mountains near Damascus and in the Palmyra region no later than 1986, and that plans have long existed to deploy them forward in an emergency since that date

- Up to 12 Scud B launchers and 200 Scud B missiles with 310 kilometers range. Believed to have chemical warheads. Scud B warhead weighs 985 kilograms. The inventory of Scud B missiles is believed to be approximately 200.

- ·The Monterey Institute of International Studies' Center for Nonproliferation Studies reports that the Chinese provided technical assistance to upgrade Scud B missiles in 1993.

- ·New long-range North Korean Scud Cs deployed Jane's cites an American Department of Defense document published in 1992 alleging that Syria had purchased 150 Scud C missiles. Two brigades of 18 launchers each are said to be deployed in a horseshoe shaped valley. This estimate of 36 launchers is based on the fact there are 36 tunnels into the hillside. The launchers must be for the Scud C since the older Scud Bs would not be within range of most of Israel. Up to 50 missiles are stored in bunkers to north as possible reloads. There is a maintenance building and barracks.

- ·Underground bunkers are thought to have sufficient storage for some 1,000 Scud-C missiles according to a fall 2002 article in the Middle East Quarterly.

- Estimates indicate that Syria has 24-36 Scud launchers for a total of 260-300 missiles of all types. The normal ratio of launchers to missiles is 10:1, but Syria is focusing on both survivability and the capability to launch a large preemptive strike.

- ·The Scud Cs have ranges of up to 550-600 kilometers. They have a CEP of 1,000-2,600 meters. Nerve gas warheads using VX with cluster bomblets seem to have begun production in early 1997. Syria is believed to have 50-80 Scud C missiles.

- ·A training site exists about 6 kilometers south of Hama, with an underground facility where TELs and missiles are stored.

- ·Jane's reports that "It was reported in early 1998 that Israeli intelligence experts had estimated that there were between 24 and 36 'Scud' launchers at most Syrian missile sites * far more launchers than previously estimated." Traditionally, armies deploying Scuds stock about 10 missiles per launcher. The higher number of Syrian launchers suggests a ratio closer to 2 missiles per launcher * this would enable Syria to launch a large first-wave strike before launchers were destroyed.

- ·Syria can now build both the entire Scud B and Scud C. It has sheltered and/or underground missile production/assembly facilities at Aleppo, Hama, and near Damascus, which have been built with aid from Chinese, Iranian, and North Korean technicians. Possibly some Russian technical aid. Israeli defense officials have been reported as stating that Syria has been producing about 30 Scud C missiles per year at an underground facility.

- ·A missile test site exists 15 kilometers south of Homs where Syria has tested missile modifications and new chemical warheads. It has heavy perimeter defenses, a storage area and bunkers, heavily sheltered bunkers, and a missile storage area just west of the site. According to some reports, Syria has built two missile plants near Hama, about 110 miles north of Damascus, one is for solid fueled rockets and the other is for

liquid fueled systems. North Korea may have provided the equipment for the liquid fuel plant, and Syria may now be able to produce the missile.

- ·Reports of PRC deliveries of missile components by China Precision Machinery Company, maker of the M-11, in July1996. The M-11 has a 186-mile (280 kilometer) range with a warhead of 1,100 pounds. Missile components may have included "contained sensitive guidance equipment."

- ·"Since 1989 there have been persistent rumors that Syria was trying to import the M-9 form China. Up to the mid-1990s, Israeli sources believed that these attempts ended in failure - Beijing reportedly backed out of the deal due to US pressure. The reports surfaced again in the late 1990s, with suggestions that the M-9 had been delivered from China - possibly in kit form, or partly assembled." ·All reports of Syrian purchases and production of Chinese M-9 missile are unconfirmed and of uncertain value.

- ·Senior administration officials were quoted as stating that China had sold missile technology to Syria. 30-90 tons of chemicals for solid propellant were sold to Syria by mid 1992.

- ·Syria has also developed, with considerable North Korean assistance, a Syrian version of the Korean No Dong (sometimes referred to as the Scud-D).

- Four tunnels for shelters for No Dong launchers have been excavated, as of late 2002.

- ·Israeli officials claimed that Syria was developing "multiple warhead clusters" in a bid to defeat Israel's Arrow missile defense system.

- Reports that ·sheltered or underground missile production/assembly facilities at Aleppo and Hamas have been built with aid from Chinese, Iranian, and North Korean technicians. Possibly some Russian technical aid.

- ·A missile test site exists 15 kilometers south of Homs where Syria has tested missile modifications and new chemical warheads. It has heavy perimeter defenses, a storage area and bunkers, heavily sheltered bunkers, and a missile storage area just west of the site.

- ·Syria has shorter range systems:

    - ·Short-range M-1B missiles (up to 60 miles range) seem to be in delivery from PRC.

    - ·SS-N-3, and SSC-1b cruise missiles.

    - ·May be converting some long range surface-to-air and naval cruise missiles to use chemical warheads.

- ·20 Su-24 long range strike fighters.
- ·44 operational MiG-23BN Flogger F fighter ground attack aircraft.
- ·20 Su-20 fighter ground attack aircraft.
- ·90 Su-22 fighter ground attack aircraft.
- ·18 FROG-7 launchers and rockets.
- ·Negotiations for PRC-made M-9 missile (185-375 mile range).
- ·Multiple rocket launchers and tube artillery.

- ·Syria thought to be interested in purchasing Russia's Iskander-E (SS-X-26) ballistic missile when once it has finished development.

- ·Syria has improved its targeting capability in recent years by making extensive direct and indirect use of commercial satellite imagery, much of which now offers 3 meter levels of resolution and comes with coordinate data with near GPS-like levels of accuracy. One-meter levels of resolution will become commercially available.

- ·The CIA estimated in January 1999 that Syria continued work on establishing a solid-propellant rocket motor development and production capability. Foreign equipment and assistance have been and will continue to be essential for this effort.

Chemical Weapons

Syria has conducted extensive research into chemical weapons, since the early 1970s, oincluding advanced types of warfheads. It has a well-developed military literature and doctrine examining the use of such weapons. It almost certainly has extensive stocks of such weapons, but the details of it warfighting capabilities are unknown.

- ·First acquired small amounts of chemical weapons from Egypt in 1973.

- ·Began production of non-persistent nerve gas in 1984. May have had chemical warheads for missiles as early as 1985.

- ·Experts believe has stockpiled 500 to 1,000 metric tons of chemical agents. Holdings thought to include persistent (VX) and non-persistent nerve agents (Sarin) as well as blister agents.

- ·Acquired design for Soviet Scud warhead using VX in 1970s.

- ·Believed to have begun deploying VX in late 1996, early 1997. CIA reported in June 1997 that Syria had acquired new chemical weapons technology from Russia and Eastern Europe in 1996.

- ·Unconfirmed reports of sheltered Scud missiles with unitary Sarin or Tabun nerve gas warheads, now being replaced by cluster warheads with VX bomblets, deployed in caves and shelters near Damascus.

- ·Tested Scuds in manner indicating possible chemical warheads in 1996.

- ·Seems to have cluster warheads and bombs.

- ·May have VX and Sarin in modified Soviet ZAB-incendiary bombs and PTAB-500 cluster bombs. Reports stated that US intelligence source had obtained information indicating a late October 1999 test of a live chemical bomb dropped by a Syrian MiG-23.

- ·Major nerve gas, and possible other chemical agent production facilities north of Damascus. Two to three plants. One facility is located near Homs and is located next to a major petrochemical plant. It reportedly produces several hundred tons of nerve gas a year. Reports is building new major plant at Safira, near Aleppo.

- ·Reports that a facility co-located with the Center d'Etdues et de Recherche Scientifique (CERS) is developing a warhead with chemical bomblets for the Scud C.

- ·Many parts of the program are dispersed and compartmented. Missiles, rockets, bombs, and artillery shells are produced/modified and loaded in other facilities. Many may be modified to use VX bomblets.

- ·Wide range of delivery systems:

- ·Extensive testing of chemical warheads for Scud Bs. May have tested chemical warheads for Scud Cs. Recent tests include a July 2001 test of a Scud B near Aleppo and a May 1998 test of a Scud C with a VX warhead near Damascus.

- ·Shells, bombs, and nerve gas warheads for multiple rocket launchers.

- ·FROG warheads may be under development.

- ·Reports of SS-21 capability to deliver chemical weapons are not believed by US or Israeli experts.

- ·Israeli sources believe Syria has binary weapons and cluster bomb technology suitable for delivering chemical weapons.

- The CIA estimated in January 1999 that Syria continued to seek CW-related precursors from various sources during the reporting period. Damascus already has a stockpile of the nerve agent Sarin and may be trying to develop more toxic and persistent nerve agents. Syria remains dependent on foreign sources for key elements of its CW program, including precursor chemicals and key production equipment.

- ·The CIA stated that Chinese entities sought to supply Iran and Syria with CW-related chemicals during this reporting period.

Biological Weapons

Syria has conducted extensive research into biological weapons, and has developed military literature and doctrine examining the use of such weapons. Its actual warfighting capabilities, if any, are unknown.

- ·Signed, but not ratified the 1972 Biological and Toxin Weapons Convention. Extensive research effort.

- ·US State Department, Bureau of Arms Control report in August 1996 indicated that, "it is highly probably that Syria is developing an offensive biological capability."

- ·Extensive research effort. Reports of one underground facility and one near the coast.

- ·Probable production capability for anthrax and botulism, and possibly other agents.

- ·Israeli sources claim Syria weaponized botulinum and ricin toxins in early 1990s, and probably anthrax.

- ·Limited indications may be developing or testing biological variations on ZAB-incendiary bombs and PTAB-500 cluster bombs and Scud warheads.

- ·Major questions exist regarding Syria's strike capabilities. Older types of biological weapons using wet agents, and placed in older bomb and warhead designs with limited dissemination capability, can achieve only a small fraction of the potential effectiveness of biological weapons. Dry micropowders using advanced agents -- such as the most lethal forms of Anthrax -- can have the effectiveness of small theater nuclear weapons. It is difficult to design adequate missile warheads to disseminate such agents, but this is not beyond Syrian capabilities -- particularly since much of the technology needed to make effective cluster munitions and bomblets for VX gas can be adapted to the delivery of biological weapons.

- ·The design of biological bombs and missile warheads with the lethality of small nuclear weapons may now be within Syrian capabilities, as is the design of UAV, helicopter, cruise missile, or aircraft-borne systems to deliver the agent slowly over a long line of flight and taking maximum advanced of wind and weather conditions. US and Soviet texts proved that this kind of "line source" delivery could achieve

lethalities as high as 50-100 kiloton weapons by the late 1950s, and the technology is well within Syria's grasp. So is the use of proxy or covert delivery.

- ·According to CIA estimates it is considered "highly probably that Syria also is developing an offensive BW capability."

Nuclear Weapons

There is no evidence of an effective Syrian nuclear weapons effort, but there are indications Syria has pursued such weapons.

- ·Ongoing research effort. No evidence of major progress in development effort.

- ·Announced nuclear reactor purchase plans including 10 megawatt research reactor from Argentina. Discussions with Argentina were resumed in the mid-1990s, but plans to build a Syrian reactor were scrapped under US pressure.

- ·Syria tried to obtain six power reactors (for a total of 6000 megawatts of generating capacity) in 1980s from a number of countries, including the Soviet Union, Belgium and Switzerland, but plans were never implemented.

- · Syria may have attempted to purchase "large (thousand ton) quantities" of yellowcake from Namibia in 1993.

- ·In December 1991 Syria purchased a 30-kilowatt neutron-source research reactor from China, reactor is not suitable for weapons production. The Atomic Energy Commission of Syria received 980.4 g of 90.2% enriched Uranium 235 as part of the deal.

- ·Russia and Syria have approved a draft of a plan for cooperation on civil nuclear power, which is expected to provide opportunities for Syria to expand its indigenous nuclear capabilities. Reports surfaced in January of 2003 indicating that Syria and Russia had reached an agreement on the construction of a $2 billion facility which would include a nuclear reactor. Although within several days, Russian Foreign Ministry officials had indicated that no reactor would be sold.