Report: Hizbullah Deployed Syrian-Made Missiles Capable of Destroying Israel

Contributed by Naharnet, Agencies
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Hizbullah has reportedly recently deployed advanced Syrian-made surface-to-surface missiles on Lebanese territory that are capable of hitting almost any target in Israel.

The report carried by the British defense weekly magazine "Jane's" said the projectiles are a clone of Iran's Fateh-110 missile which has a range of 250 kilometers and carries a 500-kg warhead capable of causing significant damage and distinguishing the levels of precision of the objectives.

Jane's military correspondent Alon Ben-David quoted Israeli military sources as confirming that the type M-600 missiles were deployed in Lebanon for the first time.

"Syria puts no limits on arms supplies to Hizbullah, and therefore, we must understand that any kind of combat weapons in the possession of the Syrian army will ultimately reach Hizbullah," Ben-David quoted an Israeli military source as saying.

Ben-David said Israel has expressed concern over Syrian weapons supplies to Hizbullah, including Russia-made medium-range surface-to-sea missiles type SS-N-26 Yakhont and defense system SA-2.

He pointed out that Israel since 2006 continues to warn that it will consider the deployment of new air defense systems in Lebanon "as a change in the balance of power in the region."

Beirut, 14 Jan 10, 08:08

http://www.naharnet.com/domino/tn/NewsDesk.nsf/getstory?openform&057481A277A7B06FC22576AB00215DC5

Chinese DF-11 or DongFeng 11 or CSS-7 or Iranian Fatah-110 or Syrian M600 Short-Range Ballistic Missile

The DongFeng 11 (Export name: M-11; NATO codename: CSS-7) is a road-mobile, single-stage, short-range ballistic missile (SRBM) system developed by CASIC Sanjiang Space Group (also known as Base 066) located in Hubei Province. The missile and its 8-wheeled transporter-erector-launcher (TEL) vehicle bear some resemblance to the Russian SS-1C Scud-B. The DongFeng 11 was developed in the 1980s intended for the export market. An improved variant DongFeng 11A with extended range and greater accuracy was fielded by the PLA ground forces in 1999.

The DongFeng 11 development began in the late 1970s as the PRC’s first conventionally-armed tactical SRBM. The missile and its 8X8 TEL vehicle were demonstrated to the PLA in 1987, and the first test launch took place in 1990. The DongFeng 11 is fully compliant with the requirements of the 1987 Missile Technology Control Regime (MTCR), which restricts the export of delivery systems and related technology for those systems capable of carrying more than 500kg payload over a range of 300km or above.

DongFeng 11 TEL vehicle (Chinese Internet)
The development of an improved variant designated DongFeng 11A began in 1993 under the support of the PLA. In addition to the extended range of over 500km, the missile is highlighted by its greater accuracy achieved by using a combined INS/GPS guidance system. The first test launch took place successfully on 6 October 1997. However, during the second test launch few days after, the missile lost control shortly after lifting off. The failure caused a major setback in the DongFeng 11A programme, with the missile’s certification postponed to mid-1998. The missile was commissioned possibly in 1999, with a tactical missile brigade activated in the Nanjing Military Region.

The DongFeng 11A was intended to be deployed by ground forces as a conventional long-range weapon to fulfil the gap in firing range between an artillery rocket system (50~100km) and a strategic surface-to-surface missile (over 600km). Nanjing Military Region deployed the PLA’s first operational DongFeng 11 missile brigade (with 20~30 missile launch systems) in the late 1990s. The 2007 US DoD Report to the Congress estimated that by 2007 a total of 575~625 DongFeng 11 missiles and 110~130 launcher systems could have been deployed, most of which are located near the Taiwan Strait.

Design

The DongFeng 11 is a road-mobile, single-stage, solid-propellant, short-range ballistic missile. The basic variant DongFeng 11 has a range of 280~350km and delivers a single-warhead of 500kg. The improved DongFeng 11A has an extended range of over 500~700km. As well as conventional high-explosive (HE) warhead, the missile may also be able to carry unconventional warhead such as fuel-air explosive (FAE), sub-munitions, and chemical agents. It may also be able to carry tactical nuclear warhead of 2~20kT yield.

DongFeng 11 TEL vehicle (Chinese Internet)
The basic variant DongFeng 11 uses an inertial guidance + terminal radar guidance, giving a circular error probability (CEP) of 500~600m . The improved DongFeng 11A uses inertial/GPS guidance system with optical correlation terminal targeting, resulting in an greater accuracy of below 200m CEP. The missile has four large stabilising fins at the bottom as well as four small fins in the mid-section for corrections at the final phase of the flight.

The missile is launched from a 8X8 WS2400 transporter-erector-launcher (TEL) vehicle, to provide full road and cross-country mobility. The vehicle was developed by Wanshan Special Vehicle Manufactory, a Sanjiang subordinate company, in the early 1980s based on the Russian MAZ543 TEL vehicle.

The Export of the DongFeng 11/M-11 Technology

In 1992 US satellites provided images showing M-11 missile canisters being delivered at Sargodha air base near Lahore, Pakistan. The Clinton administration concluded that China may have already transferred the M-11 missile system and its technology to Pakistan, though no direct evidence was provided. In August 1993 the US announced its sanction against China for selling missile components to Pakistan that were barred under the MTCR. As a result of this sanction, US-made sensitive high-tech equipment and components were banned from being sold to China, and Chinese space industry were banned from launching US-made commercial satellites for foreign customers. This sanction was lifted in 1994.

Pakistan developed Shaheen-I and Shaheen-II missile systems on the basis of the M-11 design, but with a much extended range (600~700km). A further 30 to 50 missiles and TEL vehicles may have been delivered to Iran in 1995 with the objective of setting up a final assembly and maybe even full production capability, but this report cannot be confirmed. It is possible that Iran may obtained some M-11 missile technology from other sources to develop its own solid-fuel mobile missile system.

Additionally Iran has also developed its own indigenous SRBM systems which appears to be similar to the M-11.

Specifications

Official name: DongFeng 11 (DF-11)
Export name: M-11
NATO reporting name: CSS-7
Contractor: CASIC Sanjiang Space Group (Base 066)
Service status: In service
Configuration: Single-stage, solid propellant
Deployment: Road mobile, 6X6 tractor truck + six-wheel trailer; or silo
Length: 7.5m (DF-11); 8.5m (DF-11A)
Diameter: 0.8m
Launch weight: 4,200kg
Warhead: 500kg HE
Range: 280~350km (DF-11); >500km (DF-11A)
Accuracy: CEP 500~600m (DF-11); <200m (DF-11A)
Launch preparation time: 15~30 min

Last update: 18 February 2009

Fateh A-110
Country: Iran
Associated Country: China, Syria, North Korea
Alternate Name: Mershad; Zelzal-2 variant
Class: SRBM
Basing: Road mobile
Length: 8.86 m

Diameter: 0.61 m
Launch Weight: 3450 kg
Payload: Single warhead, 500 kg
Warhead: HE, chemical, submunitions
Propulsion: Single-stage solid
Range: 210 km
Status: Operational
In Service: 2004
Details
The Fateh A-110 is a short-range, road-mobile, solid-propellant ballistic missile. It is most likely a modified version of the unguided Zelzal-2, with the addition of control and guidance systems.1 The Fateh A-110 is designed to replace many of the aging Scud systems currently used in the Middle East. While the program is based in Iran, the missile is believed to incorporate components from Chinese contractors. In 2006 The US Department of the Treasury accused Great Wall Industry, a Chinese Corporation and its partners for playing a lead role in the development of the Fateh missile system.2

Iran began developing the Fateh A-110 in 1995. Sources indicate that the missile is 8.86 m long, 0.61 m in diameter, and weighs 3,450 kg. It uses a single-stage solid propellant engine and has a range of 210 km (130 miles), although it is possible that Iran will add extra boosters in order to increase its range to 400 km (249 miles). The missile has an accuracy of about 100 m CEP and uses a combination of inertial guidance and a Global Positioning Satellite (GPS) system to locate its target. Iranian sources claim that the weapon has a high degree of accuracy which would require it to have a more sophisticated guidance system. It can carry a payload of some 500 kg and is most likely intended to deliver only high explosive, chemical, or submunitions warheads. The possibility remains, however, that Iran could deploy the Fateh A-110 with biological or nuclear warheads.

The first test flight of the Fateh A-110 occurred in May 2001, with a second the following September of 2002.3 a third test was successfully completed during the second Holy Prophet military exercise in November 2006. A fourth test was recorded in February 2003. The Iranian Revolutionary Guard successfully tested the Fateh in January of 2007 during an annual war game.4 A fifth successful test was completed in September 2007 alongside the Qadr-1 and the Shahab-3. Additional test flights are suspected to have occurred. During its tests, the Fateh A-110 was fired from a fixed launcher similar to the one used by the Russian S-75 Guideline surface-to-air missile. However, it is more likely that Iran has designed a launch vehicle to make Fateh A-110 road mobile. The launch vehicles are probably converted Scud launchers, trucks, or Zelzal-2 launch vehicles.5 Reports indicate that the Fateh A-110's tactical use is similar to that of a Scud system. Although Iran has improved the missile's overall ability, its accuracy makes the Fateh A-110 ineffective against moving military targets. However, the missile is capable of hitting most large military targets such as bases and airfields.

The missile entered low-rate production in October 2002 and initial operational achievement is believed to have occurred in 2004. Syria is known to be developing a similar short-range solid-propellant missile and to have exported a similar design to North Korea. Given their history of technological exchanges and the decreased cost by working together, it is likely that Syria and North Korea are involved with the Fateh A-110.6 Unconfirmed reports from 2008 suggest Hezbollah was supplied with Fateh A-110 rockets by Imad Mughniyeh, a recently deceased officer in the organization who reportedly received these weapons from Iran.7 It is possible that these were some of the Zelzal weapons destroyed in Lebanon by Israeli forces in 2007. Numbers and production information relating to the Fateh A-110 are currently uncertain, yet Iranian media sources claim that facilities have been created to mass produce the weapon.8

Footnotes
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Iran Conducts Missile Tests

July 9, 2008 :: New York Times :: News
Iran reportedly tested seven missiles today from a location in the Iranian desert reportedly near the Strait of Hormuz. Of the several missiles fired, reports indicate that one was the medium range Shahab-3, capable of reaching targets at a range of up to 2000 km. The other missiles fired include shorter range ballistic missiles such as the Zelzal and the Fateh 110. It is yet unclear whether the tests were successful. Iran is believed to have numerous Zelzal and Fateh missiles, and supplies them to other countries and rogue groups.

In addition to the missiles tested today, Iran is also believed to be developing longer range missiles, titled Shahab-4 and Shahab- 5, with increased range, payload, and accuracy. The rhetoric of missile bombardment most often comes from the Iranian Revolutionary Guard Corps (IRGC), Tehran's most elite soldiers with nearly complete control over the Iranian missile forces. The IRGC is commanded by Hossein Salami who released a statement today saying, "Our missiles are ready for shooting at any place and any time, quickly and with accuracy. The enemy must not repeat its mistakes. The enemy targets are under surveillance." The IRGC often conducts war games in Iran's western provinces. The majority of war games which include missile tests occur around the mountainous region of Khorramabad.

Iran's tests occur on a regular basis. Yet the timing today seems deliberate, given the U.S. agreement with the Czech Republic yesterday for the stationing of missile defense radars. Gordon D. Johndroe, assistant White House press secretary, quickly responded to the tests today saying, "The Iranian regime only furthers the isolation of the Iranian people from the international community when it engages in this sort of activity."

Update: Subsequent reports dispute the number of missiles fired and the classification of those tested this week. This does not, however, alter the fact that the Shahab-3 has been successfully tested on many previous occasions.

SS-N-26
Country: Russian Federation
Alternate Name: 3M55 Oniks
Class: S/Su/L/ALCM
Target: Ship
Length: 8.90 m
Diameter: 0.67 m
Launch Weight: 3000.00 kg
Payload: 250 kg HE, SAP
Propulsion: Ramjet w/ internal solid booster
Range: 300.00 km
Guidance: INS, active and passive radar
Status: Operational
In Service: 2002-Present
Details
The SS-N-26 is a short-range, ramjet-propelled, single warhead, air-to-surface and surface-to-surface, anti-ship cruise missile developed and manufactured by Russia. It was designed to combat naval surface ships under heavy fire and electronic counteraction. Ship-, ground-, air-, and submarine-launched versions are believed to exist.

The SS-N-26 was intended as a lighter weight follow-on system to the SS-N-9 “Siren,” SS-N-19 “Shipwreck,” and SS-N-22 “Sunburn” anti-ship missile systems. Development began in 1985 by NPO Mashinostroyeniye (previously Chelomei OKB), and the missile was first exhibited in 1993. Russia has designated the ship-launched missile 3M55, and 3K55 for the complete system. The export version is known as Yakhont.

The missile is 8.9 m in length, has a body diameter of 0.67 m, and has a launch weight of 3,000 kg. It has four delta-shaped wings at mid-body and four delta-shaped wings at the rear for control during flight. It is powered by a solid propellant boost motor and a ramjet engine. Midcourse guidance is provided by an inertial navigation system (INS), with an active/passive radar seeker for the terminal phase. The missile is capable of selecting an individual ship target from a group, even in a jamming environment.

The SS-N-26 has a cruise speed of Mach 2.6 at high altitude or Mach 2.0 at low altitude. It has a minimum range of 50 km, and a maximum range of 300 km when cruising at high altitude and 120 km when at low altitude. It flies at low level during the terminal phase, between 5 and 15 m in altitude, and makes evasive maneuvers near to the target to defeat any defenses. It carries a 250 kg high explosive semi-armor piercing warhead.

The coastal defense version of the SS-N-26 was named SSC-5 “Bastion.” It uses the same missile as the ship-launched version, but is launched from a modified “Scud B” Transporter-Erector-Launcher (TEL) vehicle. Silo-launching may also be offered.

In 1999, an air-launched version known as Alfa was reported to be in development. It has a range is 300 km when

released from high level, 200 km when released from low level, and carries a 200 kg high explosive semi-armor piercing warhead. Flight tests began in 2004, and the Alfa will probably be deployed on MiG-29 “Fulcrum,” Su-27, Su-30, and Su-33 “Flanker” aircraft, and of Tu-142M “Bear F” aircraft. The air-launched export version is known as the Yakhont-M.

A submarine-launched version has been proposed, and may currently be in development. It may be deployed on “Yasen” class (Type 885) attack submarines. A land-attack version with GPS or GLONASS added to the guidance system has also been proposed. It has been reported that an improved active radar is being developed for greater accuracy, and that an imaging infrared seeker was being developed for use against land targets.

In 2001, a new Russian-Indian cruise missile development project known as the BrahMos PJ-10 was announced. The BrahMos missile is based on the SS-N-26, and is currently being manufactured by Brahmos Aerospace, a joint venture between the Indian Defense Ministry’s Defense Research and Development Organization and Russia’s Mashinostroyeniye Company. In 2006, reports indicated that Russia and India plan to manufacture 1,000 BrahMos missiles over the next 10 years through their joint venture company.(1)

Footnotes

Duncan Lennox, ed., Jane’s Strategic Weapons Systems 45 (Surrey: Jane’s Information Group, July 2006), pp. 161-163; GlobalSecurity.org, “PJ-10 BrahMos,” available at http://www.globalsecurity.org/military/world/india/brahmos.htm, accessed on August 1, 2006; PTI News Agency, July 22, 2006.

Iran tests Tondar, Fateh 110 and Sajil missiles
{youtube}ltWeueiNpbM{/youtube}

Fateh-110/110A

Little is known at the open source level concerning the history and development of the Fateh-110 ("victory" or "victorious") system. It is believed to have been initiated in the late 1990s and is heavily based upon PRC technology—possibly the DF-11 (M-11 / CSS-7) system. The first public indications of the new system appeared in May 2001 when Iran announced that it had recently conducted a successful test of a "...domestically made solid-fueled missile." Two significant points were made in the announcement, both of which have been consistently repeated by Iranian sources since then. First, that the system was "...planned and produced totally by...the air and space unit of the Defense and Armed Forces Logistics Ministry." Second, that it is "...the most effective Iranian missiles equipment owing to its very high precision..." or that it "...can be guided to destroy targets with high accuracy." This strongly suggests that the system may be designed to utilize an optional guidance package.

A year-and-a-half later, in September 2002, Iran announced that it had conducted a successful test of a different version of the Fateh-110 known as the Fateh-110A. Ahmad Vahid, director of the Aerospace Industries Organization, indicated that the system would soon be placed into mass and stated, "Given the missile's precision, we can definitely announce that Fateh-110A is among the most precise surface-to-surface missiles in the world." While Defense Minister Ali Shamkhani said the Fateh-110 missile possessed a range of 200km.

The Fateh-110 is a 8.9m long solid-fueled rocket with a diameter of .61m and a weight of 3,450kg. It carries a 500kg warhead to a distance of 200km. It is produced under the auspices of the Aerospace Industries Organization.

No information is available concerning possible inventory levels for the Fateh-110/110A. These systems are capable of being armed with conventional high explosive, submunition, chemical, biological, and radiological dispersion warheads.

http://www.nti.org/e_research/profiles/Iran/Missile/3367_3397.html

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Israel assembles Iron Dome unit

by Staff Writers

Tel Aviv, Israel (UPI) Aug 24, 2009
Israel's drive to deploy the Iron Dome anti-missile shield against short-range rockets fired by Hezbollah and Hamas has moved up a gear with the induction of the first battalion to man the batteries that will operate on the borders with

Lebanon and the Gaza Strip.

Iron Dome intercepted three 122mm Grad rockets, the type used by Hezbollah and the Palestinians, in southern Israel July 15-16.

The system came into being in response to constant rocket attacks by Hezbollah on Israel's northern front and Hamas on the southern desert frontier over the last decade.

Both fronts have been relatively calm for some time, although the threat remains palpable.

Hezbollah has not fired any rockets since the end of the 34-day war with Israel in August 2006.

But Israeli President Shimon Peres claimed Sunday that the Iranian-backed militants have now amassed 80,000 rockets of various calibers, some with ranges of up to 160 miles and reportedly able to reach Tel Aviv, since that conflict ended.

During the 2006 war, Hezbollah unleashed some 4,000 Iranian and Syrian rockets into Israel in the most sustained bombardment of the Jewish state since it was founded in 1948.

Israel was unable to knock out Hezbollah's armories, and the militants were able to fire in excess of 100 rockets a day until the final moments of the conflict.

Hamas has been quiescent since Israel concluded a 22-day invasion of Gaza on Jan. 18. But it is not known how long that unofficial cease-fire will last. Israeli officials say Hamas has 10,000 rockets with ranges of up to 27 miles.

There are widespread concerns in the region that Hezbollah and Israel are talking themselves into another bout of fighting, largely because Iran has refused to halt its nuclear program.

The Iron Dome tests last month incorporated all the elements of the system -- the launcher and interceptor developed by state-owned Rafael Advanced Defense System, the EL/M-2084 multimission radar built by Israel Aerospace Industries' subsidiary Elta, and mPrest Systems' battle management and weapon control system.

"The successful test marks the completion of the initial development phase," Pinchas Buchris, the director general of the Defense Ministry, told Jane's Defense Weekly.

"From now on, our efforts will be to make the system operational as we plan initial operational capability from the first half of 2010. We're advancing even faster than the tight schedule we've set for the project."

The new Iron Dome battalion is scheduled to deploy the first operational battery, with four launchers, in the southern Negev Desert near the Gaza Strip next May. Deployment along the northern border with Lebanon is expected later.

The Jerusalem Post reported on Sunday that the Iron Dome battalion will be part of the Israeli military's Air Defense Division.

The new unit is commanded by Lt. Col. Shabtai Ben-Boher, who until recently headed a battalion equipped with U.S.-supplied Patriot missiles.

Officers with the new battalion have already begun operational training using computer simulators, and the primary task is to establish a doctrine for the system.

"We can't promise 100 percent hermetic defense," a senior Air Defense Division official noted. "But what we can promise is that after years of rocket fire against Gaza-belt communities there will now be an effective solution."

Iron Dome, when it is deployed, will constitute the bottom rung of a multi-layered anti-missile shield.

The David's Sling system being developed by Rafael and the U.S. Raytheon Co. will cover the middle tier countering rockets with a range of 150-250 miles, primarily the Iranian-made Zelzal and Fajr rockets and Syria's M600 weapons, all believed to be in Hezbollah's possession.

Ballistic missiles, such as Iran's Shehab-3 and Sejjil-2 systems, will be countered by the long-range, high-altitude Arrow-2 system developed by Israel and the United States.

'Gaza rockets can now hit Tel Aviv'

The Fajr-5 is an artillery rocket developed in Iran during the 1990s and is fired from a mobile launcher. It has a range of up to 50 miles.
by Staff Writers
Tel Aviv, Israel (UPI) Nov 3, 2009

Israel's military intelligence chief has warned that Palestinian militants in the Gaza Strip have successfully tested an Iranian rocket that can reach Tel Aviv, the Jewish state's largest urban conurbation.

That adds a new urgency to Israel's efforts to develop an effective defensive system capable of shooting down short-range rockets that, if the warning by Maj. Gen. Amos Yadlin is correct, are becoming a strategic threat.

Yadlin says the rocket has a range of 37 miles, 8 miles longer than the Grad rockets Hamas and its allies in the Gaza Strip have been firing in recent months.

He did not identify the Iranian system, but there have been reports that Iran has been seeking to smuggle Fajr-5 (Dawn) rockets into Gaza to give Hamas a longer reach.

The Fajr-5 is an artillery rocket developed in Iran during the 1990s and is fired from a mobile launcher. It has a range of up to 50 miles.

In January Israeli officials claimed Hamas had acquired dozens of Fajr-3 missiles, with a range of 25 miles, and that these were used to hit the Negev town of Beersheba.

These have largely supplanted the short-range Qassam rockets made by Hamas in its clandestine workshops around the Gaza Strip.

There were concerns that the nuclear reactor at Dimona, 20 miles east of the biblical city, could also become a target. If Hamas does have Fajr-5s, then that nightmare scenario has become real.

According to Jane's Defense Weekly, Syria has decided to provide the Iranian-backed Hezbollah movement in Lebanon some 250 of its 800 M600 surface-to-surface missiles.

The M600 is a clone of Iran's Fateh-110 missile, which has a range of 160 miles, carries a 225-pound warhead and, unlike most of the short- and medium-range missiles currently arrayed against Israel, has an inertial guidance system. This would give Hezbollah new precision capabilities.

The Israelis believe the Iranians seek to eventually put all of Israel under threat from these missiles from Lebanon in the north and Gaza in the south, while targeting the Jewish state with its long-range Shehab and Sajjil ballistic missiles.

To counter these multiple threats, Israel has the Arrow-2 anti-ballistic missile for long-range, high-altitude defense, with the Kippat Barzel (Iron Dome) and (Kela David) David's Sling systems to cover the medium- and short-range threats.

The first Iron Dome battery is expected to be deployed in the southern Negev in 2010, while David's Sling is scheduled to become operational in 2012-13.

The Raytheon Co. of the United States last month was awarded two contracts worth in excess of $100 million by Israel Rafael Advanced Defense Systems to develop the David's Sling Weapons System to counter short-range ballistic missiles, large-caliber rockets and cruise missiles in their terminal phase of flight.

That is a joint program between the Missile Defense Agency and the Israel Missile Defense Organization.

One contract was awarded to co-develop the Stunner Interceptor, the system's missile component. The other was for the development, production and integrated logistics support of the missile firing unit, the system's launcher.

Meantime, Israel's military is expected to soon take delivery of the new Raz radar system, which can detect the firing of mortar shells, a tactic widely used by Hamas on the Gaza front, with more accuracy and at greater ranges than systems currently operational. It is scheduled for deployment during 2010.

An early variant of the Raz was successfully tested during Operation Cast Lead, the 22-day invasion of the Gaza Strip by the Israeli army on Dec. 27.

Cast Lead's stated purpose was to eliminate Hamas' rocket and mortar fire into Israel, and since that operation was concluded on Jan. 18 the attacks have been virtually eliminated.

http://www.spacewar.com/reports/Gaza_rockets_can_now_hit_Tel_Aviv_999.html

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Fateh A-110 (Iran), Offensive weapons

Type
Short-range, road-mobile, solid propellant, single warhead ballistic missile.

Development
Development of the Fateh A-110 ballistic missile probably started around 1995, and the project was originally called 'Mershad'. The design and development has been carried out by Iran Aerospace Industries, and appears to be a modified Zelzal 2 unguided rocket, with guidance and control assemblies added. A US report stated that the solid propellant motor for the A-110 was developed and manufactured by the Shahid Bagheri Industrial Group (SBIG), and that this group also developed and built the Fajr unguided rocket family. An unconfirmed report stated that some technologies were purchased from the Argentinian Alacran ballistic missile programme, whilst other reports have suggested that the design was based on the Russian R-65 FROG. The original Fateh version may have the designator A-110, an improved version A-110A (or Fateh 2), and a longer range version A-110B (or Fateh 3) is believed to be in development. There have been separate reports from Iran that a Zelzal 3 rocket was being developed, with two strap-on solid boosters, to provide a range of up to 400 km. This programme might also be applied to an upgraded Fateh A-110B in the future. Syria has been reported to be developing a short-range solid propellant ballistic missile, and in February 2008 Syria reported that it was developing a surface-to-surface missile with Iranian assistance. This Syrian project is believed to be a known as M-600, and is based on the Fateh A-110B (Fateh 3), with a range of 250 km. In addition, Syria is believed to have

http://www.janes.com/articles/Janes-Strategic-Weapon-Systems/Fateh-A-110-Iran.html

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Missile Factories - SYRIA

Hama

Name: Hama

Other Names: Hamah, Hammah

Location: Latitude 35° 08' North; longitude 36° 45' East; 110km north of Damascus; province of Hama.

Subordinate to: The Syrian Missile Command

Primary Function: There are reportedly two missile factories located at this complex, one is designed to produce solid fuel missiles; the other is designed to produce liquid fuel missiles.

Description: 1992 press reports indicated that two missile factories were being constructed in Syria, Hama being one, the other being Aleppo. It was later suggested that North Korea, Iran and China all assisted in Hama's construction. The Hama facility is reportedly located approximately 25km east of the town of Hama, on the road to as-Salamiyah.
In addition to solid and liquid-fuel missiles, it is also reported to produce missile guidance systems, possibly an effort to improve the accuracy of the Scud-C.

Chinese specialists were reported to have repeatedly visited Syria in 1993, specifically to work on guidance systems, and were observed shuttling between Hama and the larger Aleppo facility.

Two 18-launcher Scud-C brigades, for a total of 36 are thought to be deployed at the Hama site. This number is generally deemed high for a single site; most Scud sites around the world average just 10 per launcher. The strategic thinking behind the heavy missile to launcher ratio is thought be that firing the missiles in several salvos would inflict maximum damage on the target. One source suggests that the Hama facility houses a full half of Syria's missiles.

Key Sources: "Hama," <http://www.globalsecurity.org/wmd/world/syria/hama.htm>. Accessed on 24 March 2004; William Safire, "China's 'Hama Rules'," The New York Times, 5 March 1992, p. 27; Vadim Kozyulin, "Syria's Missile Deterrent: Final Breakthrough," PIR Arms Control Letters, October 26, 2000, <http://www.pircenter.org/board/article.php3?artid=434>; "Syria: Missile Development," The Risk Report, March-April 1997, http://www.wisconsinproject.org/countries/syria/missiles.html.

http://www.nti.org/e_research/profiles/Syria/Missile/4123_4326.html

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Missile Facilities

Aleppo

Name: Aleppo

Other Names: Halab

Location: Latitude 36° 12' North; longitude 37° 09' East; 350km north of Damascus; province of Halab.

Subordinate to: The Syrian Missile Command is based here.

Primary Function: Missile Command HQ; missile storage and production site

Description: 1992 press reports indicated that two missile factories were being constructed in Syria. Aleppo was one, the other was at Hama. Chinese specialists were reported to have repeatedly visited Syria in 1993, specifically to work on guidance systems, and were observed shuttling between Hama and the larger Aleppo facility.

The Syrian Missile Command based in Aleppo controls three mobile surface-to-surface missile (SSM) brigades comprising one battalion each (per brigade) of FROG-7 SSM, SS-21 Scarab SRBM and Scud-B missiles, with ranges between 70 and 300km. The missile command oversees operations of underground missile facilities, at least 15 of which are being readied for approximately 1000 Scud-C missiles, with a 500km range and Scud-D missiles, with a 700km range, are housed in tunnel complexes.

Many of the Scud-C missiles are known to be located currently at Hama; the Scud-D missiles are presumably in Aleppo and are being manufactured with assistance from the DPRK, China and Iran. The Chinese M-9 missile is also thought to be produced in Aleppo. Syria took delivery in May 2000 of a new, more accurate, missile from North Korea based on the Scud-D; the first indication of its existence however, did not occur until September of that year when it was picked up by radar during a test firing.

All of Syria's Scuds are allegedly designed to carry a full panoply of warheads, to include conventional, and potentially chemical or biological. Aleppo is viewed as one of several possible dual-use sites in Syria, as it includes a pharmaceuticals plant which enjoyed heavy investment from the Syrian government, to the tune of $40 million. However, although construction began in 1989, there has been no further indication of its completion.

Key Sources: Dany Shoham., "Poisoned Missiles: Syria's Doomsday Deterrent," The Middle East Quarterly, Fall 2002, <http://www.meforum.org/article/510>; John Pike, "Aleppo," Globalsecurity.org <http://www.gloabalsecurity.org/wmd/world/syria/aleppo.htm>. Accessed on 24 March 2003; "Syrian Ballistic Missile Arsenal," IraqWar.ru, <http://www1.iraqwar.ru/iraq-read_article.php?articleId=4872&lang=en>; William Safire, "China's 'Hama Rules'," The New York Times, March 5, 1992, p.27; "Syria: Missile Development," The Risk Report, March-April 1997, http://www.wisconsinproject.org/countries/syria/missiles.html.