

# U.S. AND IRANIAN STRATEGIC COMPETITION:

**Iran's Perceptions of its Ballistic Missile  
Program and Competition with the US and  
the Gulf, Sept. 2010 – Feb. 2011**

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With the assistance of Adam Seitz of the Marine Corps University, the Burke Chair has compiled a series of chronological reports that focus on Iranian perceptions of national security and assess Iran's intentions concerning competition with the US.

The latest version of these reports is entitled "U.S. and Iranian Strategic Competition: Iranian Views of How Iran's Asymmetric Warfare Developments Affect Competition with the US and the Gulf, Sept. 2010 – Feb. 2011," and is available on the CSIS web site at <http://csis.org/publication/us-and-iranian-strategic-competition-1>.

In a Feb. 2011 press conference, General Mohammed Ali Jafari, the commander of the Iranian Revolutionary Guard Corps (IRGC), unveiled a new, locally developed missile. In reference to the missile, he stated that "as the enemy's threats will likely come from the sea, air, and by missiles, the Revolutionary Guard has been equipped with capabilities to neutralize the enemy's advanced technology."<sup>1</sup> Such statements are useful in assessing Iran's perception of its strategic competition with the US. They provide valuable insight regarding Iran's disposition toward the US military presence in the region, its responses to that presence, and ultimately how it intends to confront the US strategically. As a key element of Iran's strategic deterrent and doctrine of asymmetric warfare, Iran's advancements in ballistic missile technology cannot be ignored.

Tehran views ballistic missiles as critical to its national defense. In addition to an effective means for delivering a nuclear warhead, Iran's military establishment firmly believes that an effective ballistic missile program provides the country with increased strategic and asymmetric capabilities. Since the early 1980s, Iran has been developing a burgeoning ballistic missile capability based on Russian, North Korean, and Chinese technology. Iran currently possesses the largest ballistic missile inventory in the Middle East, and the country's military and scientific establishments are working to increase the sophistication, scale, and reach of its missiles.<sup>2</sup> Tehran sees its missile capabilities as a key element to deter attack as well as a means to strike at high-value targets with little warning, such as Western and Western-backed forces in the region, including US bases in the Persian Gulf.

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<sup>1</sup> Iranian Students News Agency, 07 Feb. '11

<sup>2</sup> Statement for the Record on the Worldwide Threat Assessment of the U.S. Intelligence Community for the House Permanent Select Committee on Intelligence, James R. Clapper, 11 Feb. '11

Of particular note are Iran's medium-range ballistic missiles (MRBMs), which include the Shahab-3 and its longer range variants. Based on the North Korean Nodong-1, the Shahab-3 has a range of 1,000 to 1,500km, and can potentially reach targets throughout the Middle East.<sup>3</sup> Other Iranian MRBMs include variants of the Shahab-3, such as the Shahab-3A, Shahab-3B, Shahab-4 (Ghadr-1), Sejil, and the BM-25. These missiles have ranges of 1,500 to 2,500km, and are thought to be able to strike at targets throughout the Middle East, Turkey, and southeast Europe.<sup>4</sup> In response to Iran's continuing development of MRBMs and research into intercontinental ballistic missiles (ICBMs), the US Navy has stationed Aegis anti-ballistic missile cruisers in the Persian Gulf. Additionally, Bahrain, Egypt, Israel, Jordan, Kuwait, and Saudi Arabia have acquired the MIM-104 Patriot surface-to-air missile system from the US, which is capable of intercepting and destroying incoming ballistic missiles.<sup>5</sup>

The Iranian leadership is not shy about its country's advancements concerning ballistic missile technology. High-ranking officials in Iran's political and military establishments regularly boast of their country's progress in this field. On Feb. 8, 2011, the *Tehran Times* reported on IRGC chief Mohammed Ali Jafari's claims at a press conference that Iran had developed "supersonic" smart ballistic missiles which "cannot be tracked and can hit targets with high precision" as well as "coastal radars with a range of 300km."<sup>6</sup> General Jafari also stated at the conference that the IRGC had recently completed studies on two mobile radars with a range of 60km, which could be attached to small destroyers.<sup>7</sup> Similarly, the Islamic Republic News Agency quoted General Jafari as stating that, "Iran is mass producing a smart ballistic missile for sea targets with a speed three times more than the speed of sound."<sup>8</sup> The Iranian Students News Agency quoted General Jafari as stating the following regarding the new weapon,

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<sup>3</sup> U.S. Congressional Research Service. "Iran's Ballistic Missile Programs: An Overview." RS22758, 04 Feb. '09, Steven A. Hildreth.

<sup>4</sup> U.S. Congressional Research Service. "Iran's Ballistic Missile Programs: An Overview." RS22758, 04 Feb. '09, Steven A. Hildreth.

<sup>5</sup> Sanger, David. E, Schmitt, Eric."U.S. Speeding Up Missile Defenses in Persian Gulf" *The New York Times*. 30 Jan '10.

<sup>6</sup> "Iran mass producing smart ballistic missiles: IRGC chief." *Tehran Times*, 08 Feb. '11

<sup>7</sup> "Iran mass producing smart ballistic missiles: IRGC chief." *Tehran Times*, 08 Feb. '11

<sup>8</sup> Islamic Republic News Agency, 07 Feb. '11

“As the enemy’s threats will likely come from the sea, air, and by missiles, the Revolutionary Guard has been equipped with capabilities to neutralize the enemy’s advanced technology.”<sup>9</sup>

As the commander of the IRGC, statements made by Mohammed Ali Jafari are not to be taken lightly. While General Jafari’s statements do not mention the US directly, his mention of an enemy with “advanced technology” threatening Iran from the sea and air most likely alludes to US air and naval power. This statement and others like it reflect Iran’s strategic priority of denying foreign access to its waters, and what Iran perceives as the best measures for countering the US presence in the Persian Gulf region.

Other senior officials in Iran’s government have recently highlighted the importance of ballistic missile development. At an IRGC ceremony on Sept. 21, 2010, Iran’s Minister of Defense, Ahmad Vahidi, stated that “the operational capabilities of the missile unit of the IRGC Aerospace Force will be remarkably enhanced” by the third generation of the domestically designed and produced Fateh-110 missile.<sup>10</sup> These remarks made by such a high-ranking figure are revealing; they are a direct indication of the Iranian regime’s continued willingness to improve its asymmetric capabilities against the US and step up its deterrent to attack.

Since Oct. 2010, it is believed that Iran has used satellite launches as a means of conducting further research into its ballistic missile program. While the Iranian government has not stated that these launches serve to further its missile program, there is good reason believe that they are intended to broaden Iran’s technical expertise regarding ballistic missile technology. In early Feb. 2011, Iranian President Mahmoud Ahmadinejad stated that Iran would fire a number of new satellites into orbit over a 12 month period starting in March 2011.<sup>11</sup> Additionally, on Jan. 31, 2011, Iran’s government announced that it would soon unveil two new satellite-launch rockets: the Safir 1-B, which is capable of placing a 110 lb. satellite in 185-280-mile orbit, and the Kavoshgar-4 rocket, which has a range of roughly 75 miles.<sup>12</sup> Although for the stated purpose of launching satellites, the technology used to do so is equally applicable to the research and development of ballistic missile technology.

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<sup>9</sup> Iranian Students News Agency, 07 Feb. ‘11

<sup>10</sup> The Ministry of Defense of the Islamic Republic of Iran website, 21 Sept. ‘10

<sup>11</sup> “Iran Plans Multiple Satellite Launches.” Agence France Presse, 07 Feb. ‘11.

<sup>12</sup> “Iran to Display New Satellite-Launch Rockets.” Agence France Presse, 31 Jan. ‘11

As the Islamic Republic sees ballistic missiles as an integral aspect of protecting its revolution and safeguarding the regime from foreign intervention, these developments cannot be ignored. Although Iran's missiles are believed to be conventionally armed and limited in range, many could potentially be armed with nuclear or chemical warheads. They also constitute the building blocks for the Islamic Republic to eventually produce ICBMs, which may be close to becoming a reality: in his Feb. 10, 2011 statement in front of the House Permanent Select Committee on Intelligence, the US Director of Intelligence, James R. Clapper, stated,

“In February 2010, Iran displayed a new rocket engine design that Tehran said is for the Simorgh, a large space launch vehicle. It also displayed a simulator of the Simorgh. This technology could be used for an ICBM-class vehicle.”<sup>13</sup>

In light of these developments, it is clear that the Islamic Republic will continue to develop its ballistic missile capabilities as a way to counter perceived American aggression. Given the growing sophistication, range, and scale of Iranian missiles, the country's research and development into this technology will continue to shape the balance of forces and power in the Middle East for the foreseeable future.

The above statements made by key individuals within the Iranian regime since September 2010 are revealing. Regardless of their bias or validity, they reflect the continued hostility of the regime toward the US presence in the region as well as its desire to render the Persian Gulf inaccessible to US forces and influence. As long as the Islamic Republic sees its regional interests encroached upon or threatened by larger, more technologically advanced forces, it will almost certainly continue to develop its missile capabilities to compensate for its conventional shortcomings.

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<sup>13</sup> Statement for the Record on the Worldwide Threat Assessment of the U.S. Intelligence Community for the House Permanent Select Committee on Intelligence, James R. Clapper, 11 Feb. '11.

## Iran's Ballistic Missile Arsenal<sup>14</sup>

Shahab-3 ("Meteor")	800-mile range. The Defense Department report of April 2010, cited earlier, has the missiles as "deployed." Still, several of its tests (July 1998, July 2000, and September 2000) reportedly were unsuccessful or partially successful, and U.S. experts say the missile is not completely reliable. Iran tested several of the missiles on September 28, 2009, in advance of the October 1 meeting with the P5+1.
Shahab-3 "Variant"/Sajjil	1,200-1,500-mile range. The April 2010 Defense Department report has the liquid fueled Shahab-3 "variant" as "possibly deployed." The solid fuel version, called the Sajjil, is considered "not" deployed by the Defense Department. The Sajjil is alternatively called the "Ashoura." These missiles potentially put large portions of the Near East and Southeastern Europe in range, including U.S. bases in Turkey.
BM-25	1,500-mile range. On April 27, 2006, Israel's military intelligence chief said that Iran had received a shipment of North Korean-supplied BM-25 missiles. Missile said to be capable of carrying nuclear warheads. The <i>Washington Times</i> appeared to corroborate this reporting in a July 6, 2006 story, which asserted that the North Korean-supplied missile is based on a Soviet-era "SS-N-6" missile. Press accounts in December 2010 indicate that Iran may have received components but not the entire BM-25 missile from North Korea.
ICBM	U.S. officials believe Iran might be capable of developing an intercontinental ballistic missile (3,000 mile range) by 2015, a time frame reiterated by the April 2010 DOD report.
Other Missiles	On September 6, 2002, Iran said it successfully tested a 200 mile range "Fateh-110" missile (solid propellant), and Iran said in late September 2002 that it had begun production. Iran also possesses a few hundred short-range ballistic missiles, including the <i>Shahab-1</i> (Scud-B), the <i>Shahab-2</i> (Scud-C), and the <i>Tondar-69</i> (CSS-8). In January 2009, Iran claimed to have tested a new air-to-air missile. On March 7, 2010, Iran claimed it was now producing short-range cruise missiles that it claimed are highly accurate and can destroy heavy targets.
Space Vehicle	In February 2008, Iran claimed to have launched a probe into space, suggesting its missile technology might be improving to the point where an Iranian ICBM is realistic. Following an August 2008 failure, in early February 2009, Iran successfully launched a small, low-earth satellite on a Safir-2 rocket (range about 155 miles). The Pentagon said the launch was "clearly a concern of ours" because "there are dual-use capabilities here which could be applied toward the development of long-range missiles."
Warheads	A <i>Wall Street Journal</i> report of September 14, 2005, said that U.S. intelligence believes Iran is working to adapt the Shahab-3 to deliver a nuclear warhead. Subsequent press reports say that U.S. intelligence captured an Iranian computer in mid-2004 showing plans to construct a nuclear warhead for the Shahab. The IAEA is seeking additional information from Iran.

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<sup>14</sup> U.S. Congressional Research Service. "Iran: U.S. Concerns and Policy Responses." RL32048, 14 Feb. '11, Kenneth Katzman

## Iranian Rockets and Missiles

<b>Missile</b>	<b>Translation</b>	<b>Fuel Type</b>	<b>Estimated Range</b>	<b>Payload</b>
Fajr-3	<i>Dawn-3</i>	Solid	45km	45kg
Fajr-5	<i>Dawn-5</i>	Solid	75km	90kg
Fateh-110	<i>Victorious</i>	Solid	200km	500kg
Ghadr-1	<i>Powerful-1</i>	Liquid	1600km	750kg
Iran-130/Nazeat	<i>Removal</i>	Solid	90-120km	150kg
Kh-55		Liquid	2500-3000km	400-450kg
Nazeat-6	<i>Removal-6</i>	Solid	100km	150kg
Nazeat-10	<i>Removal-10</i>	Solid	140-150km	250kg
Oghab	<i>Eagle</i>	Solid	40km	70kg
Sajjil-2	<i>Baked Clay-2</i>	Solid	2200-2400km	750kg
Shahab-1	<i>Meteor-1</i>	Liquid	300km	1000kg
Shahab-2	<i>Meteor-2</i>	Liquid	500km	730kg
Shahab-3	<i>Meteor-3</i>	Liquid	800-1000km	760-1100kg
Shahin-1	<i>Hawk-1</i>	Solid	13km	
Shahin-2	<i>Hawk-2</i>	Solid	20km	
Zelzal-1	<i>Earthquake-1</i>	Solid	125km	600kg
Zelzal-2	<i>Earthquake-2</i>	Solid	200km	600kg

Source: 2010 IISS Iran's Ballistic Missile Capabilities: A Net Assessment, pg. 1

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\* Indicates Iranian news sources

Tuesday, February 8, 2011 6:29 AM

## **Iran unveils new satellites, rockets, to boost scientific might**

By IBTimes Staff Reporter

Iran has unveiled domestically manufactured satellites and a satellite-carrier rocket and would launch several new locally built satellites within the next 13 months, the local satellite Press TV reported.

Four national satellites, Fajr (Dawn), Rasad (Observation), Zafar (Victory) and Amirkabir I, and a satellite carrier Kavoshgar 4 (Explorer 4) were unveiled on Monday by Iranian President Mahmoud Ahmadinejad, the report said. The first-stage and second-stage engines of the Safir-e-Fajr satellite carrier and a space recycling and environmental station were also unveiled during the ceremony.

The new landmarks in the space development also coincide with celebrations marking the anniversary of the 1979 Islamic revolution.

Iran launched its first satellite into orbit in February 2009. In 2010, it unveiled three new communications satellites, plus a domestically produced carrier, Simorq, which can take a 100-kg satellite into orbit.

Iran is using the opportunity to tout its scientific and technological achievements after President Mahmoud Ahmadinejad opened a new space research and training centre last week.

While Western nations have expressed concern that Iran could use its satellite-launching technology for long-range missiles capable of carrying nuclear warheads, Iran denies having military goals for its space or nuclear programs stressing that its nuclear program solely exists to generate electricity.

Despite Tehran's claims, the UN Security Council has passed three sets of sanctions against Iran over the country's refusal to halt peaceful enrichment work, targeting Iran's shipping industry, insurance, banking and energy sectors.

## **Iran mass producing smart ballistic missiles: IRGC chief \***

Tehran Times Political Desk

Tuesday, February 8, 2011

### **TEHRAN – Iran is mass producing smart ballistic missiles which can be used against naval targets, the IRGC commander announced on Monday.**

These supersonic missiles cannot be tracked and can hit targets with high precision, Mohammad Ali Jafari told a press conference.

Jafari also said the Islamic Revolution Guards Corps is currently manufacturing radars with a range of 500 kilometers, adding the IRGC will also start manufacturing radars with longer ranges in the next Iranian calendar year which starts on March 21.

He went on to say that the IRGC has finished studies on two mobile radars with a range of 60 kilometers, which can be attached to small destroyers.

A study for producing coastal radars with a range of 300 kilometers has also been finished, the top military commander added.

On Iran's capability to counter cruise missiles, Jafari said the IRGC can hit such missiles before touching the ground in some parts of the country including Tehran Province.

## Iran Plans Multiple Satellite Launches

Monday, Feb. 7, 2011

Iranian President Mahmoud Ahmadinejad today said his country would fire into orbit a number of new satellites over a 12-month period starting in March, Agence France-Presse reported (see [GSN](#), Jan. 31).



(Feb. 7) - A photo released by Iran today depicting what was described as a new surface-to-sea ballistic missile. Tehran unveiled the weapon along with engines for a new satellite-launch rocket and four newly developed orbiters ([Getty Images](#)).

"I think from the end of this (Iranian) year (to March 20) and through the next year, we will see many launches" of indigenously produced orbiters, Ahmadinejad said (Agence France-Presse I/[Google News](#), Feb. 7).

"We should reach a point where we will be able to provide our knowledge and technology in the aerospace field to other countries," Reuters quoted him as saying. The satellites were intended for scientific research, he said (Hossein Jaseb, [Reuters](#), Feb. 7).

Iran's program for launching satellites has drawn concerns from the global community, as technology used to place orbiters into space can also be applied to ballistic missiles. Worries on Tehran's missile capabilities are twinned with suspicions that it is operating a nuclear-weapon drive in the guise of a civilian program. Iran says its atomic activities have no military component (see related [GSN](#) story, today).

The Persian Gulf nation today placed on display motors for its new Safir 1-B rocket, as well as what it described as the first assembled versions of four new domestically constructed satellites, AFP quoted news reports as saying. The Safir 1-B rocket is capable of placing a 110-pound satellite in a 185- to 280-mile elliptical orbit, according to Iranian state media (Agence France-Presse I). The nation showed video of a rocket capable of placing a satellite in orbit, Reuters reported (Jaseb, Reuters).

The Fajr craft displayed today was assembled by the nation's Defense Ministry and would operate as a spy satellite, according to AFP. Iran's Rasad-1 satellite was prepared by the Tehran-based Malek Ashtar University, which has ties to the Iranian Revolutionary Guard.

Iranian Defense Minister Ahmad Vahidi late last year said the Fajr and Rasad-1 satellites were slated for placement in space by March 20. Vahidi yesterday said the timing of the deployments was "not fixed," though, suggesting the satellite firings could be postponed, AFP reported.

Iran unveiled its Zafar satellite, but no detail on the craft was provided. The Amir Kabir-1 orbiter was constructed by Amir Kabir University in Tehran, but that vessel's purpose was also uncertain (Agence France-Presse I).

Iran also announced it has begun manufacturing a new line of surface-to-sea ballistic missiles capable of striking ships within 185 miles.

"Iran is mass producing a smart ballistic missile for sea targets with a speed three times more than the speed of sound," the Islamic Republic News Agency quoted Gen. Mohammad Ali Jafari as saying.

The weapon is "undetectable and can't be neutralized by enemies," Jafari added. "It has very high precision in destroying targets."

Jafari did not identify the weapon by name.

"As the enemy's threats will likely come from the sea, air and by missiles, the [Revolutionary Guard has] been equipped with capabilities to neutralize the enemy's advanced technology," the Iranian Students News Agency quoted him as saying (Agence France-Presse II/[Yahoo!News](#), Feb. 7).

## U.S. Fears Chinese Firms Selling WMD Materials to Iran, North Korea

Thursday, Feb. 3, 2011

Recently leaked U.S. cables detail Washington's worries that Chinese firms in recent years had exported goods to Iran that could be used to produce weapons of mass destruction, the *London Telegraph* reported today (see *GSN*, Oct. 26, 2009).

The Bush administration was sufficiently worried that Chinese weapons and equipment were reaching Iran that the State Department in September 2008 launched a concerted diplomatic campaign to press Beijing to better administer controls on weapon sales to Tehran, according to the newspaper.

The United States provided information to Italy, Spain and six other "key allies" in order to "persuade China to enforce its export control laws more effectively" and to "aggressively implement" U.N. Security Council resolutions on trade in weapons and related goods, according to a document made available by the transparency group WikiLeaks.

Diplomats were directed to recommend that other governments emphasize to Beijing that weapon exports to Tehran "could ultimately damage China's reputation and its bilateral relationship" with "the each of the foreign states in question, papers show.

The United States and allied nations suspect Iran has developed its atomic program with the intent of developing nuclear weapons. Tehran says its atomic operations are strictly civilian in nature (Gordon Rayner, *London Telegraph I*, Feb. 3).

In one case believed, U.S. intelligence believed a Chinese branch of a German company had provided Iran with a test chamber usable in missile development, *Washington Times* quoted a July 2009 State Department cable as saying.

"Although this particular test chamber is not controlled by the Missile Technology Control Regime, it is suitable for subjecting missile components and systems to the harsh environmental conditions experienced by missiles during launch, flight, and re-entry," the document states.

In addition, China insisted that a shipment of weapon-sensitive sodium sulfide was bound for Armenia, despite open-source indications that the material was being delivered to Iran, the *Times* quoted an April 2008 cable as saying. The United States also urged China to look into a possible shipment to North Korea of material usable in chemical warfare materials, according to another communication from that month (Bill Gertz, *Washington Times*, Feb. 2).

Meanwhile, the Israeli intelligence agency Mossad lobbied the United States to press automobile producers to ensure their vehicles were not acquired by the Iranian Revolutionary Guard for use as missile carriers, the *Telegraph* reported.

Mossad broached the issue with the United States in October 2007, sharing photos of Iranian missile technology being fixed atop and pulled by a variety of vehicles manufactured by companies such as Honda, Toyota and Mercedes.

Israeli intelligence officials were also worried that French car companies could unknowingly assist Iran's WMD production program.

"The Mossad representative noted that two large car manufacturers, Renault and Peugeot, are manufacturing cars in Iran. He urged that the U.S. make the case to them that their activities were contributing to Iran's WMD program," wrote then-U.S. political officer in Tel Aviv Marc Sievers. "He acknowledged that legally they are not doing anything wrong, but it might be worthwhile to show them how their business is helping proliferators" (Matthew Moore, [London Telegraph II](#), Feb. 2).

## Iran to Display New Satellite-Launch Rockets

*Monday, Jan. 31, 2011*

Iran announced yesterday it would soon display two new rockets capable of placing satellites in orbit, Agence France-Presse reported (see GSN, Jan. 10).

The Middle Eastern nation will roll out the Safir 1-B and Kavoshgar 4 rockets over a 10-day commemoration of its 1979 Islamic revolution, state media quoted Iranian Defense Minister Ahmad Vahidi as saying. The celebration begins tomorrow.

The Safir 1-B rocket is capable of placing a 110-pound satellite in a 185- to 280-mile elliptical orbit, according to Iranian state television's website. A Safir 2 rocket in 2009 launched Iran's first domestically produced satellite into space.

Iran's new Kavoshgar 4 rocket can travel roughly 75 miles. The nation's Kavoshgar 3 rocket carried several small animals into orbit last February (see GSN, Feb. 3, 2010).

Vahidi last month said his country would fire a new observation satellite into space within months.

Iran's program for launching satellites has drawn concerns from the global community, as technology used to place orbiters into space can also be applied to ballistic missiles. Worries on Tehran's missile capabilities are twinned with suspicions that it is operating a nuclear-weapon drive in the guise of a civilian program. Iran says its atomic activities have no military component (see related GSN story, today; Agence France-Presse/Google News, Jan. 30).

## Uncertainty Persists Over Alleged Missile Sale to Iran

Monday, Dec. 6, 2010

A number of U.S. diplomatic cables released by the transparency organization WikiLeaks appear to conflict with an assertion in one communication that North Korea provided Iran with missiles capable of reaching Western Europe and Russia, the *New York Times* reported Friday (see [GSN](#), Dec. 1).

State Department nonproliferation officials told the Kremlin in February that Iran had purchased 19 North Korean BM-25 missiles that were developed based on the nuclear-capable Russian R-27 weapon.

Despite general U.S. consensus that Iran purchased a quantity of BM-25 components from North Korea in 2005, no indications have emerged that Tehran has tapped the items to build a full version of one of the missiles, U.S. officials told the *Times*. Tehran would have to test experimental versions of the system for years before the weapon could be placed on combat duty, they noted.

The 2005 acquisition might not have included full "missile kits," or Iranian experts might have struggled to understand the parts, one U.S. official said, speculating over the apparent delay in Iran's exploitation of the technology. The State Department cables referred to the transferred items as "missiles" or "missile systems," not as components or "kits."

Communications authored over four years expressed varying levels of confidence that the sale had taken place, according to the *Times*. One document said Iran "has probably acquired" the weapons, while another referred to "substantial data indicating Iranian possession of a missile system."

Still, an Iranian rocket used to place a satellite in orbit last year is likely to have incorporated BM-25 components, and data from the launch probably benefited Iranian military work, U.S. officials and independent experts said.

"Just because the BM-25 program hasn't progressed as far as the Iranians hoped it would, the concern remains," an official said.

Israel reacted with greater concern to the alleged BM-25 sale than Russia, which contends no such weapon was ever developed.

"It is possible that the BM-25 does not exist," Iranian rocketry expert Michael Elleman stated by e-mail. "However, it is more likely that it does, in some fashion. We just do not know, precisely, because it has never been tested" (Mazzetti/Broad, [New York Times](#), Dec. 3).

*The New York Times*

December 3, 2010

## Wider Window Into Iran's Missile Capabilities Offers a Murkier View

By [MARK MAZZETTI](#) and [WILLIAM J. BROAD](#)

WASHINGTON — It was one of the most provocative assertions to emerge from the [WikiLeaks](#) cache — a diplomatic cable from this past February confidently describing the sale of 19 missiles to [Iran](#) by North Korea that could give Tehran the ability to strike Western Europe and Russia.

But a review of a dozen other State Department cables made available by WikiLeaks and interviews with American government officials offer a murkier picture of Iran's missile capabilities. Despite the tone of the February cable, it shows there are disagreements among officials about the missiles, and scant evidence that they are close to being deployed.

The conflicting portraits illustrate how the batch of diplomatic documents made available by WikiLeaks can be glimpses of the American government's views, sometimes reflecting only part of the story, rather than concrete assertions of fact.

While there are a range of opinions about the details of the weapons sale and the readiness of the missiles, what most American officials appear to agree on is that at the very least North Korea sold a number of ballistic missile parts to Tehran in 2005.

The sale set off alarms in Washington, because the parts were for BM-25 missiles, a weapon with powerful engines that — if deployed by Iran — could bolster Tehran's ability to strike far beyond the Middle East, State Department cables show.

But five years later, American officials in interviews said that they had no evidence that Iran had used the parts or technology to actually construct a BM-25, let alone begin the years of flight testing necessary before it could reliably add the missile to its arsenal.

It is unclear why Iran appears to have had trouble with the BM-25. According to one American official, it is possible that Iran did not get complete "missile kits" from the North Koreans in 2005, or that Iranian scientists have had difficulty mastering the technology.

Both American officials and outside experts appear to agree, however, that Iran did use some of the BM-25 technology to launch a satellite into space last year, and that Iranian scientists probably used data from that launching for its military program.

"Just because the BM-25 program hasn't progressed as far as the Iranians hoped it would, the concern remains," said one official, who spoke on the condition of anonymity because assessments about Iran's missile program are classified.

The dozen cables provide a glimpse of secret discussions between the United States and a number of foreign governments about the BM-25, described earlier this week in an article in The New York Times. Their views are colored by their relationships with Iran.

The Israelis, for instance, take a more alarmist stance than the United States because Israel regards Iran as its greatest threat. Russia, on the other hand, denies that the BM-25 even exists.

In the cables, American officials argue that North Korea developed the medium-range weapon based on a Russian design, the R-27, once used on Soviet submarines to carry nuclear warheads.

The cables describe how the North Koreans, in turn, transferred “missiles” or “missile systems” to Iran. The cables do not refer to missile parts or “kits.”

But the cables, written over four years, vary in the certainty with which Americans make the claim about the technology transfer, with one cable saying Iran “has probably acquired” BM-25s and another discussing “substantial data indicating Iranian possession of a missile system.”

The public release of the cables has stirred debate among experts outside the government on the existence of the BM-25 and whether, if Iran has the weapon, it poses an immediate threat to Western Europe.

Many experts say the BM-25 has undergone no flight testing either by North Korea or Iran, and they note that traditionally it takes a dozen or so tests over several years to perfect a missile and prepare it for military deployment.

On the other hand, [NATO](#) last month agreed to establish an antimissile shield and has invited Russia to take part, suggesting growing concern in Europe of an Iranian missile threat.

One of the most knowledgeable public analysts of Tehran’s endeavors in rocketry is Michael Elleman, a missile engineer who contributed to a report on Iran’s program issued in May by the International Institute for Strategic Studies, an arms analysis group in London.

That report was skeptical of Iran’s having obtained the BM-25 from North Korea. Now, Mr. Elleman said, he is less certain.

“It is possible that the BM-25 does not exist,” he said in an e-mail message. “However, it is more likely that it does, in some fashion. We just do not know, precisely, because it has never been tested.”

The first cable in the WikiLeaks cache that refers to the BM-25 came from the American Embassy in Tel Aviv, sent to Washington on May 5, 2006. The cable discusses a meeting a

month earlier between Senator [Joseph I. Lieberman](#), the Connecticut independent, and Meir Dagan, director of Mossad, Israel's main spy agency.

According to the cable, Mr. Dagan talked of Iran's having a medium-range missile, the Shahab-3, that "can currently carry nuclear material, and reported that Iran is also trying to adapt the BM-25 missile, which already has a longer range, for this purpose."

American intelligence officials do not believe that Iran has yet mastered the technology to put a nuclear warhead on top of a missile.

But the most detailed discussion about the missile is contained in a cable from Feb. 24 of this year, which describes the disagreements between American and Russian officials about the missile.

The cable shows that American officials firmly believed that Iran had obtained 19 of the missiles from North Korea, and that there was direct evidence of the weapons transfer. But it goes on to indicate that the Russians dismiss that claim as a myth driven by politics.

*Mark Mazzetti reported from Washington, and William J. Broad from New York.*

## US says Iran got missile boost from North Korea

(AP) – 3 hours ago (Nov. 30, 2010)

DUBAI, United Arab Emirates (AP) — A U.S. intelligence assessment concludes that Iran has received advanced North Korean missiles capable of targeting Western European capitals and giving the Islamic Republic's arsenal a significantly farther reach than previously disclosed.

The suspected shipment — mentioned among the flood of classified State Department memos obtained by WikiLeaks — could also give Iran an important boost toward joining the powerful group of nations with intercontinental ballistic missiles, defense experts said Monday.

The U.S. suspicions carry still another jolt: reinforcing international fears about the possibility of closer nuclear cooperation in the future between Iran and North Korean engineers, who have already staged atomic tests.

U.S. officials presented the claim in a meeting with top Russian security officials in late 2009 but did not offer conclusive evidence of the transfer of at least 19 so-called BM-25 missiles, according to the confidential Feb. 24 memo posted by WikiLeaks.

It also noted that "Russia does not think the BM-25 exists" and questioned why there have been no Iranian tests of the missile, believed to be based on a Russian design that could be fitted with nuclear warheads.

Still, the U.S.-Russia meeting found ample common ground over concerns that North Korea appears to be actively engaged with Iran in exporting weapons systems and possible nuclear expertise. A U.N. report accusing North Korea of exporting banned nuclear and missile technology to Iran, Syria and Myanmar was sent to the Security Council earlier this month.

"This just confirms a lot of the rumors and reports about the capabilities of the North Koreans and gives more credence to those who support a defense shield against Iran," said Theodore Karasik, a regional security expert at the Institute for Near East and Gulf Military Analysis in Dubai.

Independent defense analysts say the possible acquisition of longer-range missiles fits into Iran's step-by-step claims of being able to reach farther from its borders. A year ago, Iran said it successfully test-fired an upgraded version of its Sajjil-2 missile with a reported range of 1,200 miles (2,000 kilometers), putting Israel, U.S. bases in the Gulf and parts of southeastern Europe well within reach.

The range of the BM-25s parent design — the submarine-launched Russian R-27 — is about double: 2,400 miles (4,000 kilometers), the memo said. That covers Western Europe, Moscow and much of Central Asia.

Such a missile could give Iran the ability to carry much larger warheads and give technicians the ability to study and copy an advanced propulsion and guidance systems — all key elements if Iran ever seeks to develop a nuclear arms program as some Western leaders fear. Iran, however, says it only seeks reactors for energy production and medical research.

It would not be the first time Iran has relied on North Korean missile technology. Iran's Shahab-3 missile, first displayed in 1998, is based on North Korea's Nodong-1 design.

But the American claims, if true, could mark the first delivery to Iran of a fully operational and state-of-the-art North Korean missile.

"(Iran) is working on improving their accuracy and not just their range. No one is challenging them and they aren't hiding this," said Ephraim Kam, an Israel-based expert on Iranian affairs. "And there is no doubt that North Korea has given them tremendous assistance in developing these missiles."

The American document did not offer details about the suspect sale or transport of the missile. But another memo describes how Chinese officials failed to intercept shipments of missile parts transiting from North Korea to Beijing, where they were put on Iran Air cargo flights to Tehran.

Besides simply boosting Iran's military muscle with more powerful missiles, the suspected BM-25s would give Iranian technicians a firsthand look at large missile designs and systems toward possibly developing long-range, or intercontinental ballistic missiles, with ranges of up to 3,400 miles (5,800 kilometers) and beyond.

The State Department memo said Iran could view the BM-25 components as "building blocks" for long-range missile development.

Paul Rogers, an expert in defense affairs at the University of Bradford in Britain, said Iran could be seeking to move from its main arsenal of liquid-fueled missiles — that would include the suspected BM-25s — toward longer-range, solid-fueled rockets such as the current known top weapon, the Sajill-2.

The main advantages of solid-fuel missiles are mobility and the ability to fire quickly, he said. They are also more accurate. Liquid fuel takes time to load and cannot remain in the missile indefinitely. Such missiles also need to be near a fuel depot and cannot easily be moved.

"The issue here is whether they are trying to make the leap from liquid fuel to solid fuel," said Rogers.

In February, Iran unveiled a light, two-stage booster rocket it claimed could carry a satellite weighing 220 pounds (100 kilograms) up to 310 miles (500 kilometers).

It came a year after Iran claimed it launched a small satellite into orbit for 40 days — part of an ambitious space program that has worried Western powers because they fear the same technology could also deliver warheads.

Meir Javedanfar, an Iranian-born political analyst now based in Israel, said the leaked memo on suspected North Korean missile sales could "strengthen the voice of those who want military action" against Iran.

"They could say that with such cooperation, sanctions and diplomacy are not going to work," he said.

Many other internal State Department exchanges among the WikiLeaks trove cite Gulf Arab allies and others expressing deep fears about Iran's nuclear ambitions and urging America to consider military strikes.

In Tehran, President Mahmoud Ahmadinejad dismissed the State Department documents as "without value" and claimed the leaks were an effort to sour relations between Iran and its neighbors.

*Associated Press writer Amy Teibel in Jerusalem contributed to this report.*

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## **U.S. asked China to stop missile parts shipment to Iran**

Washington Post

Monday, November 29, 2010; A04

### **U.S. asked China to keep missile parts from Iran**

The United States asked China in 2007 to stop a shipment of ballistic missile parts going from North Korea to Iran through Beijing and indicated that the U.S. government was fed up with China's unwillingness to crack down on such trade, according to reports Sunday based on U.S. diplomatic cables.

Another cable highlighted U.S. concern this year that Chinese firms were supplying North Korea with precursors for chemical weapons - in what would be a violation of U.N. sanctions.

A third cable, quoting an unidentified Chinese contact interviewed in January, claimed that China's Politburo ordered Chinese hackers to break into Google's computer systems last year as part of a massive effort by Chinese state-backed saboteurs to infiltrate the e-mail accounts and databases of political dissidents and foreign governments.

The cables were among more than 250,000 U.S. diplomatic missives released Sunday by WikiLeaks.

U.S. officials have long accused China of failing to crack down on proliferation activities that occur on its territory. For decades, China was a major proliferator of missiles itself, but that activity seemed to slow in the 1990s under U.S. pressure. China passed export control laws, but Beijing has rarely, according to U.S. officials and the cables revealed Sunday, actively worked to stop proliferation from occurring on its territory.

According to a cable dated Nov. 3, 2007, and signed by then-Secretary of State Condoleezza Rice, a North Korean cargo of missile jet vanes destined for Iran's ballistic missile program was set to be shipped the next day from North Korea via Beijing on an Iran Air flight.

"The [State] department is seeking both immediate action . . . and a strategic approach with regards to this critical issue," the cable says. "We now have information that the goods will be shipped on 4 November and insist on a substantive response from China. . . . We assess that the best way to prevent these shipments in the future is for Chinese authorities to take action . . . that will make the Beijing airport a less hospitable transfer point." It is unclear whether China moved to stop the shipment.

Earlier this year, Secretary of State Hillary Rodham Clinton continued to pressure China on proliferation issues, this time because it was apparently turning a blind eye to its own companies.

In that cable, in May, Clinton said the United States was concerned that exports by named Chinese firms "could be used for or diverted to a CW [chemical weapons] program."

## North Korea Supplied Powerful Missiles to Iran, Cables Reveal

Monday, Nov. 29, 2010

Classified U.S. intelligence reports have determined that North Korea supplied Iran with a stockpile of sophisticated missiles that would extend the Middle Eastern state's strike capabilities in ways the United States had previously not disclosed, the *New York Times* reported yesterday (see [GSN](#), March 8).

U.S. intelligence officials strongly believe that Tehran acquired from the North 19 missiles that were developed from Russian blueprints. The missiles could enable Iran to launch attacks on cities in Western Europe or Moscow -- something it had not previously been able to do, according to a February 24 classified diplomatic cable that detailed a conversation between senior Russian officials and a visiting group of U.S. State Department officials. The cable was made publicly available by the transparency advocacy group WikiLeaks in a large data dump yesterday.

Going back four years, there have been intermittent reports that North Korea could have exported to Iran missiles based off the Russian-developed R-27, which was at one time fitted with nuclear warheads and deployed on Soviet submarines.

U.S. spy officials believe Tehran is going to lengths to perfect its mastery over the new missiles so it can use them to develop advanced missiles of its own, according to the February cable.

"Iran wanted engines capable of using more-energetic fuels and buying a batch of BM-25 missiles gives Iran a set it can work on for reverse engineering," the cable reads.

Pyongyang used the R-27 missile to build its own BM-25 missile, which could be fitted with a nuclear weapon. Multiple specialists contend that Iran still remains far behind the North in developing the ability to wield a nuclear weapon compact enough to be fielded on a missile.

Missile experts say the BM-25 has a longer length and is weightier than the R-27. It can travel farther than the Russian missile as well -- as far as 2,000 miles ([New York Times](#), Nov. 28).

A separate diplomatic cable obtained by WikiLeaks revealed that in 2007, Washington requested that China move to block North Korea from exporting ballistic missile components to Iran through its capital city, the *Washington Post* reported. The cable pointed to Washington's growing frustration with Beijing's apparent disinterest in stopping such commerce.

The November 3, 2007, cable from former Secretary of State Condoleezza Rice said that a North Korean shipment of missile jet vanes was scheduled to depart from Beijing on November 4 on an Iran Air aircraft and fly to Iran.

"The (State) department is seeking both immediate action ... and a strategic approach with regards to this critical issue," the cable reads. "We now have information that the goods will be shipped on 4 November and insist on a substantive response from China. ... We assess that the best way to prevent these shipments in the future is for Chinese authorities to take action ... that will make the Beijing airport a less hospitable transfer point."

It is not known if the Chinese government took action to block the export deal from going forward (John Pomfret, *Washington Post*, Nov. 29).

Rice's cable asserted that a minimum of 10 other shipments of a similar nature had been permitted to go forward over U.S. objections, the *Wall Street Journal* reported.

A February cable from Secretary of State Hillary Clinton indicated that Washington continues to be worried about Iran receiving missile technology from China. The cable directed U.S. diplomats to call on Beijing to move on intelligence that Tehran was attempting to purchase Russian-made gyroscopes from a Chinese firm. The technology can aid in the stabilization and targeting accuracy of ballistic missiles.

Another cable from that month said Tehran was attempting to procure the same gyroscope model from China through a Malaysian intermediary. A third cable asserted Iran was trying to acquire five tons of carbon fiber from a Chinese firm. The dual-use material could be utilized to build casing and nozzles for missiles (Jeremy Page, *Wall Street Journal*, Nov. 29).

A different cable from 2010 pointed to U.S. worries that Chinese companies were selling the North materials that could be used to build chemical munitions, the *Post* reported (see *GSN*, Oct. 13).

In a May cable, Clinton said the Obama administration was worried that shipments from Chinese companies "could be used for or diverted to a CW program" (Pomfret, *Washington Post*).

The New York Times

November 28, 2010

## Iran Fortifies Its Arsenal With the Aid of North Korea

By WILLIAM J. BROAD, JAMES GLANZ and DAVID E. SANGER

*This article is by **William J. Broad, James Glanz and David E. Sanger.***

Secret American intelligence assessments have concluded that [Iran](#) has obtained a cache of advanced missiles, based on a Russian design, that are much more powerful than anything Washington has publicly conceded that Tehran has in its arsenal, diplomatic cables show.

Iran obtained 19 of the missiles from [North Korea](#), according to a cable dated Feb. 24 of this year. The cable is a detailed, highly classified account of a meeting between top Russian officials and an American delegation led by Vann H. Van Diepen, an official with the State Department's nonproliferation division who, as a national intelligence officer several years ago, played a crucial role in the 2007 assessment of Iran's nuclear capacity.

The missiles could for the first time give Iran the capacity to strike at capitals in Western Europe or easily reach Moscow, and American officials warned that their advanced propulsion could speed Iran's development of intercontinental ballistic missiles.

There has been scattered but persistent speculation on the topic since 2006, when fragmentary reports surfaced that North Korea might have sold Iran missiles based on a Russian design called the R-27, once used aboard Soviet submarines to carry nuclear warheads. In the unclassified world, many arms control experts concluded that isolated components made their way to Iran, but there has been little support for the idea that complete missiles, with their huge thrusters, had been secretly shipped.

The Feb. 24 cable, which is among those obtained by [WikiLeaks](#) and made available to a number of news organizations, makes it clear that American intelligence agencies believe that the complete shipment indeed took place, and that Iran is taking pains to master the technology in an attempt to build a new generation of missiles. The missile intelligence also suggests far deeper military — and perhaps nuclear — cooperation between North Korea and Iran than was previously known. At the request of the Obama administration, The New York Times has agreed not to publish the text of the cable.

The North Korean version of the advanced missile, known as the BM-25, could carry a nuclear warhead. Many experts say that Iran remains some distance from obtaining a nuclear warhead, especially one small enough to fit atop a missile, though they believe that it has worked hard to do so.

Still, the BM-25 would be a significant step up for Iran.

Today, the maximum range of Iran's known ballistic missiles is roughly 1,200 miles, according to experts. That means they could reach targets throughout the Middle East, including Israel, as well as all of Turkey and parts of Eastern Europe.

The range of the Russian R-27, launched from a submarine, was said to be up to 1,500 miles.

Rocket scientists say the BM-25 is longer and heavier, and carries more fuel, giving it a range of up to 2,000 miles. If fired from Iran, that range, in theory, would let its warheads reach targets as far away as Western Europe, including Berlin. If fired northwestward, the warheads could easily reach Moscow.

A range of 2,000 miles is considered medium or intermediate. Traditionally, the United States has defined long-range or intercontinental ballistic missiles as having ranges greater than 3,400 miles.

The fuel for the advanced engines goes by the tongue-twisting name of unsymmetrical dimethylhydrazine, according to the secret cables. It is a highly toxic, volatile clear liquid with a sharp, fishy smell.

International concern about advances in Iran's missile program increased last year, after Tehran sent its first satellite into space. Experts said it was clear that the second stage of the rocket, known as the Safir, had employed a new, more powerful class of engines that took advantage of some elements of the Russian technology. American government experts say the engines of the Russian R-27 represent an improvement of roughly 40 percent in lifting force over the kerosene-fired engines that power most Iranian missiles.

"Without this higher-energy output, the Safir would have failed in its mission to orbit a small satellite," said a report issued in May by the International Institute for Strategic Studies, an arms analysis group in London.

The London group's report, though, gives no indication of access to the American intelligence assessment. Indeed, the report argued that while Iran had some elements of the R-27 technology, the available public evidence suggested that it had made no purchase of either the complete North Korean missile or its Russian parent.

The cables say that Iran not only obtained the BM-25, but also saw the advanced technology as a way to learn how to design and build a new class of more powerful engines.

"Iran wanted engines capable of using more-energetic fuels," the Feb. 24 cable said, "and buying a batch of BM-25 missiles gives Iran a set it can work on for reverse engineering."

The cable added that Tehran could use the BM-25 technologies as "building blocks" for the production of long-range missiles. But it offered no information to back up that assessment.

*Andrew W. Lehren contributed reporting.*

## NATO leaders to avoid citing Iran as missile threat

By David Williams (AFP) – 3 hours ago

LISBON — NATO leaders will launch a new Europe-wide ballistic missile shield at a Lisbon summit but will not openly identify Iran as a threat so as to win over Turkey, officials said Thursday.

US President Barack Obama and supporters of the shield want to wrap up broad agreement at the Friday-Saturday summit on a missile umbrella stretching across European members of the 28-nation alliance.

Turkey is mindful of its delicate position with neighbouring Iran, however, and has said it will refuse to sign up to a NATO document that names Iran as the threat in the final declaration.

Diplomats said there had been intense debate in the run-up to the summit about whether Iran should be targetted as a specific menace in the public document they adopt.

On the eve of the tightly secured Lisbon talks, however, an official at French Elysee presidential office in Paris told reporters that Iran will not figure as a missile threat in the public declaration.

"This will not figure in those words in the document that we are to adopt," the official said, speaking on condition of anonymity. "We will not put the origin of the emerging menace in black and white in the documents to be adopted."

The French official did not give a reason for omitting a mention of Iran from the NATO document, but Turkish President Abdullah Gul had said 10 days ago that identifying Iran "is wrong and will not happen."

Even if Iran is left out of the final declaration, allies were still debating Thursday whether to mention Iran in a list of countries identified in a confidential threat assessment, a NATO diplomat said on condition of anonymity.

"Certain countries are uncomfortable with naming their neighbours," a senior US official said this week.

NATO Secretary General Anders Fogh Rasmussen told reporters on Monday that there was "no reason to name specific countries."

"The fact is that more than 30 countries have, or are aspiring to get missile technologies with a range sufficient to hit targets in the Euro-Atlantic area," he said.

NATO wants to link existing or future national missile defence systems to create an umbrella that would protect all of Europe's population and territory, at a cost of less than 200 million euros, officials say.

Russian President Dmitry Medvedev, who will meet here Saturday with NATO leaders for the first time since waging a war with Georgia in 2008, has fought against the missile shield as a menace to its own nuclear deterrence.

NATO leaders plan to defuse this opposition by inviting Russia to join the defence shield, extending its protection across Russian territory.

"We are trying to find the language that makes it clear that this is not about Russia, which is pretty easy by saying we're going to ask Russia to cooperate with us," the senior US official said.

"There is no doubt that there is a growing threat. Missiles are proliferating," he added.

Rasmussen has said he expects Russia and NATO to launch a study of Russia's possible inclusion in the missile defence system, which would be a remarkable turnaround after years of outright opposition by Moscow.

Posted 28 minutes ago

## Israeli Missile Expert: Tel Aviv Vulnerable to Hizballah, Syrian Missiles

GMP20101116739001 Tel Aviv [Channel 10 Television Online](#) in Hebrew 1837 GMT 15 Nov 10

[Report by Alon Ben-David: "1,500 Missiles Likely To Hit Tel Aviv in Next War"]

Israel's cultural capital has become increasingly threatened in recent years by missiles and rockets. At an aerospace conference in Jerusalem, Uzi Rubin, one of Israel's senior missile experts, said that some 1,500 missiles and rockets already threaten Tel Aviv from Lebanon, Syria, Iran, and Gaza. To illustrate, Rubin took a map of Tel Aviv and drew on it a map of its vulnerability to a barrage of 10 heavy rockets with 500-kg warheads that will be aimed at the Defense Ministry and General Staff in the Defense Ministry compound. "The capability of the other side today, of Hizballah and the Syrians, includes selecting targets in Tel Aviv," he explained. Of the residents who live in the area, Rubin said that he "hopes they have a good safe room."

Rubin has been studying the Hizballah and Syrian missile buildup for years, and he recommends listening carefully to the threats by Hizballah leader Hasan Nasrallah at the beginning of the year. "If you destroy a building in Dahiya, we will destroy buildings in Tel Aviv," the organization's secretary general said then. "I want to tell the Israelis: If you bomb Rafiq al-Hariri International Airport in Beirut, we will bomb Ben-Gurion Airport in Tel Aviv," Nasrallah threatened.

"Two years before that, this was mere talk, he didn't have the capability," explained Rubin. "Today, the capability is being built. It is our ports, power stations, transportation centers, and army command centers that are in danger. In situations like this, I don't think we will be able to continue eating sushi in State Square in Tel Aviv, and for anyone who wants to go on a ski vacation, Ben-Gurion Airport will probably be out of action, so he will have to postpone it."

Rubin warned that Israel is spending too little on defense. The IDF has bought only two batteries of the Iron Dome system, each of which can protect a medium-sized city. No decision has been made yet on acquiring an additional battery. The Magic Wand program, which is intended to deal with heavy rockets, is two years away from operational capability, which means that the protection that Israeli citizens have against missiles is only very partial.

[Description of Source: Tel Aviv Channel 10 Television Online in Hebrew -- Commercial television, independent in content; <http://news.nana10.co.il>]

## Security Council to release long-delayed North Korea nuclear report

By Colum Lynch

Washington Post Staff Writer

Tuesday, November 9, 2010; 10:52 PM

UNITED NATIONS - The U.N. Security Council was preparing Tuesday to release a long-delayed report alleging that [North Korea](#) may have transferred ballistic-missile and nuclear technology to Syria, [Iran](#) and Burma, according to diplomats.

The 75-page report, whose release has been blocked for six months by [China](#), an ally of Pyongyang, reinforces U.S. claims that North Korea has emerged as a key supplier of banned weapons materials to Washington's greatest rivals.

A copy of the report was seen by The Washington Post.

The findings are based on interviews with several foreign governments, U.N. nuclear inspectors and news media reports. Those accounts, according to the U.N. report, indicate North Korean "involvement in nuclear ballistic missile related activities in certain other countries, including Iran, Syria and Myanmar," Burma's official name.

Nonproliferation experts have been concerned about North Korea for years. In his new memoir, "Decision Points," former president George W. Bush reveals that, in 2007, U.S. intelligence determined that Syria had built a nuclear reactor with North Korean help. (Israeli jets destroyed the reactor, after then-Prime Minister Ehud Olmert's [request that the United States bomb the facility was rebuffed](#), Bush recounts, adding that Olmert "hadn't asked for a green light.")

In addition to voicing alarm over the reactor in Syria, the seven-member panel that produced the U.N. report said it was investigating "suspicious activity" by a sanctioned North Korean firm in Burma, as well as reports that [Japan](#) had arrested three individuals last year for "attempting to illegally export a magnetometer to Myanmar."

A magnetometer - which has civilian and military uses - is one of numerous items that can be used in the production of a ring magnet, a component in a centrifuge. It can also be used in a missile guidance system.

An earlier version of the U.N. panel report's findings was reported by the blog [Arms Control Wonk](#). But David Albright, a nuclear weapons expert, said the report's formal release will be important because it places a U.N. imprimatur on allegations by Western intelligence agencies and independent experts.

"It's significant that they are saying it," Albright said.

The earlier move by China to block the report underscores the country's increasing efforts to prevent the Security Council from vigorously enforcing a broad range of global sanctions that have targeted key Chinese allies, and in some cases, turned up awkward evidence of Chinese arms in some of the world's most deadly conflict zones. China recently sought to block the release of another U.N. panel report showing that Chinese ammunition has found its way into Darfur, in violation of U.N. sanctions.

Its decision to lift the hold on the report comes two days before President Obama is due to meet Chinese President Hu Jintao in Seoul, where the two leaders are attending a summit of the Group of 20 major economies. The United States has been the strongest proponent of imposing tough U.N. sanctions against North Korea in an effort to persuade the hermetic communist regime to curtail its nuclear ambitions.

China's press spokesman, Yutong Liu, did not respond to a request for comment.

The Security Council expanded U.N. sanctions against North Korea last year and revived a moribund sanctions panel to ensure the enforcement of measures aimed at curbing North Korean trade in nuclear and ballistic-missile technology. China supported the resolution's adoption, but it has voiced concern privately over the public disclosure of highly sensitive findings.

*Staff writer Glenn Kessler in Washington contributed to this report.*

**SPECIAL REPORTS****Date Posted: 26-Oct-2010**Jane's Missiles & Rockets

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**New missiles shown in Pyongyang military parade****Doug Richardson**

During a military parade held in Pyongyang on 10 October to celebrate the 65th anniversary of the North Korean Workers' Party (KWP), three missile systems were displayed for the first time. These were the Musudan intermediate-range ballistic missile (IRBM); a version of the No Dong IRBM fitted with a triconic ('baby bottle-shaped') payload; and a vertically launched surface-to-air missile (SAM) system similar in appearance to the Russian S-300 and Chinese HQ-9.

Other missiles taking part in the parade included eight KN-02 'lookalikes' of the Tochka (SS-21 'Scarab') and a formation of transporter-erector-launchers (TELs) armed with Hwasong 5 derivatives of the Russian 'Scud B' tactical ballistic missile.

The existence of a land-based derivative of the Russian R-27 (SS-N-6 'Serb') submarine-launched ballistic missile (SLBM) has been reported since 2003. The designation Musudan has been used for this missile by the US, while the Israelis use the designation BM-25

The new IRBM was displayed for the first time during a military parade in April 2007, but on that occasion no pictures were released. Eight Musudan TELs took part in the 10 October parade. The vehicle has six axles and is similar to the MAZ-547 developed for use with the Russian RSD-10 (SS-20 'Saber') IRBM. Each carries a single missile.

Sized to be housed in the launch tubes mounted within the hull of a Project 667A ('Yankee-class') submarine, the R-27 was a sophisticated design by the standards of the late 1950s, when its development was begun, combining a lightweight structure and nitrogen tetroxide and UDMH propellants, a combination with a higher specific impulse than those used in earlier land-based missiles and which did not enter service with the land-based missile force until the debut of the UR-100 (SS-11 'Sego') intercontinental ballistic missile in 1965.

The earlier R-21 (SS-N-6 'Sark') had a range of about 1,400 km, but was 14.2 m long and 1.3 m in diameter - dimensions that required its launch tubes to be housed in the fin of the 'Golf' and 'Hotel'-class submarines that carried it. Creating a shorter missile suitable for installation within a submarine's hull required that the main engine of the R-27 be mounted within the lower propellant tank, so that it was submerged in propellant.

While this solution reduced overall length, it made engine maintenance or repair difficult. Some sources have suggested that even if the missile's tanks had been drained to give access to the engine, the effects of extended immersion in the propellant would have required the engine to be scrapped rather than reused.

In creating the Musudan, [North Korea](#) 'stretched' the R-27 design, increasing its length from the 9.6 m of the original missile to an estimated 12 m. The prospect of redesigning the aft end of the missile to mount the engine in a conventional propulsion bay must have been tempting, but the fairing used to provide electrical connections between the forward-mounted guidance system and the engine-control system runs all the way to the rear of the redesigned missile, suggesting that the powerplant is still submerged in the lower propellant tank.

As a result of this design decision, the North Korean engineers were free to use the additional fuselage length to accommodate additional propellant. In his analysis of the redesigned missile, David Wright, senior scientist and co-director, global security at the Union of Concerned Scientists, has estimated that the propellant load was increased from the 12.3 tonnes carried by the R-29 to about 17.1 tonnes and that the stretch added a further 200 to 250 kg to the missile's empty weight, bringing the latter to 1.3 metric tonnes. This additional weight would give a launch mass of 18.6 tonnes (not counting the missile payload). Assuming that the engine thrust was unchanged, the extra propellant would give a burn time of 178 sec (54 sec more than that of the R-27).

In conducting his analysis of the design, Wright assumed a specific impulse of 270 sec rather than the theoretical value of the high 280s. When used in a computer model, this data suggested that the new missile would have a range of 3,200 km with a 650 kg throw weight (the weight commonly reported for the R-27 payload).

Increasing the throw weight to 1,000 kg reduced the range to 2,700 km, Wright reported, while a payload of only 500 kg would give a range of 3,500 km.

Adapting and stretching the R-27 for land-based use created several potential problems. A submarine launch tube is a more benign environment than a TEL, so the original design may not have been ideally suited to life aboard a road vehicle.

In its May 2010 report "Iran's Ballistic Missile Capabilities; A Net Assessment", the International Institute for Strategic Studies (IISS) noted that an R-27 variant destined for deployment on a road-mobile launcher would have to undergo what the institute described as "significant structural modifications" and predicted that these would "rob the modified missile of as much as 100-200 km of range".

A more serious problem is posed by the limited temperature tolerance of the R-27's propellant combination. Nitrogen tetroxide has a freezing point of -11 degrees C and a boiling point of only 21 degrees C. Since the maximum temperature during the North Korean summer can reach 28-29 degrees C between mid-July and mid-August and averages more than 20 degrees C from mid-June to mid-September, a fuelled missile and its TEL

would have to be stored in a temperature-controlled shelter for much of the year and in summer the missile would have to be fired a relatively short time after leaving the shelter.

Development of the Musudan missile system probably started about a decade ago, but the degree of Russian involvement in the project remains unclear. Although Russia has exported some rocket hardware, in the past such official exports were limited to old technology such as obsolete motors based on low-performance propellant combinations such as nitric acid and hydrocarbon-based fuels, or cryogenic propellants more suited for space applications than military use.

In its recent report, the IISS stated that while it seems unlikely that complete or disassembled R-27s were cleared for export, "it is possible that individual components of the missile may have been smuggled out of the country". As evidence for this, the IISS noted the use of R-27 vernier (steering) engines in the second stage of Iran's Safir space launcher.

Transfers of a small number of Musudan missiles to [Iran](#) have been reported for the past five years, but the only hardware to have been publicly displayed by [Iran](#) was that used in the Safir second stage.

The greatest mystery surrounding the Musudan is the lack of identifiable flight tests. Although it is possible that one or two of the July 2006 flight-tests conducted by [North Korea](#) might have been limited-range trials of the Musudan, it is unlikely that the telemetry transmissions and flight characteristics of such tests would have gone unnoticed by US intelligence.

Several months ago, a non-US source with good knowledge of the Iranian missile programmes told *Jane's* that the Musudan had not been flight-tested by [North Korea](#) or [Iran](#). He could offer no explanation for the prolonged absence of flight trials.

Up to 50 Musudan TEL vehicles and missiles are reported to be deployed at four separate locations in [North Korea](#), but this figure is contested. The South Korean newspaper *Chosun Ibo* believes that about a dozen systems are located at bases in Yangdok, South Pyongan Province, and Sangnam-ni, Hochon, North Hamgyong Province. Given the absence of flight-tests, the operational status of the Musudan system remains unclear.

At least eight TELs carrying Nodong missiles took part in the parade. These vehicles have five axles and appear to be an enlarged version of the four-axle MAZ-543-based TEL used for the smaller Hwasong 5 missile. All the Nodongs in the parade were fitted with a triconic payload similar to that seen on Iran's Ghadr and Sejil 2 missiles.

It is not known whether the triconic design is an Iranian development that has been made available to [North Korea](#) (or vice versa) or is the result of a joint programme by both countries.

The biggest surprise of the parade was what appeared to be a new vertically launched North Korean SAM system. Eight TELs each carrying three missile canisters were preceded

by two radar vehicles similar in configuration to the 'Flap Lid' radar used in the Russian S-300 system and the SJ-231 radar used by the HQ-9.

The radar and TEL were based on the same chassis, which is also used by the KN-02 tactical ballistic missile. This is based on a Russian KAMAZ truck. [North Korea](#) has a KAMAZ truck assembly line using components built in [Russia](#).

As a result of this choice of chassis, the new SAM system will be road-mobile, but would have only limited off-road capability compared with its Russian and Chinese counterparts.

Like the Russian and Chinese radar vehicles, the North Korean radar uses a tracking and guidance system based on a passive electrically scanned antenna. Stored in a flat position on the roof of the radar vehicle, it is raised to its operating position. It consists of a flat-panel array of phase shifters, which is illuminated by a retractable feed. Below this main array are a row of six smaller elements.

*Jane's Defence Weekly* has assessed the North Korean radar to be smaller than the equivalent Russian and Chinese systems in Pyongyang

The TELs are fitted with stabilising jacks, but it is not clear how the tubes are erected. Since the central missile of the three is carried slightly higher than the two outboard tubes, it is possible that a raising mechanism is located under the centre tube.

*Jane's Defence Weekly* estimates the length of the launch tube carried by the TELs to be about 7.25 m to 7.5 m, and speculated that the tube may contain a version of the Chinese HQ-9 missile, which Chinese sources report to be 6.51 m long.

Like the tubes of the S-300 and HQ-9 systems, the North Korean tubes are ribbed. Each has seven ribs (one of which is doubled), spaced approximately equidistantly, plus a rib close to either end. This configuration is closer to that of the HQ-9 tube (which has nine equidistantly spaced ribs plus one at either end) than the S-300 series. For example, the S-300PMU tube has eight ribs along its length (two of which are doubled), a single rib at one end and a double rib on the other.

The debut of the North Korean SAM system raises the possibility of technological co-operation between that country and [Iran](#) on this programme. Although Iran displayed what seemed to be S-300-like system hardware during its 18 April Army Day parade, these were widely believed to have been mock-ups. The antenna array of the Iranian 'radar vehicle' was carried in the stowed position during the April parade, so it cannot be compared with the North Korean array. However, the configuration of the ribs on the Iranian tubes does not match that seen on their North Korean equivalents.

The SAM equipment shown in the Pyongyang parade seems more like real hardware than that displayed by [Iran](#), suggesting that if the programme is a joint development, [North Korea](#) may be the lead partner, working almost certainly with major assistance from a third party such as [China](#). A possible transfer of elements of this new North Korean SAM

to [Iran](#) might explain the latter country's confidence that it will be able to manufacture its own S-300-class SAM system.

### **Missiles Exhibited in Tehran Square \***

*Tabnak* reported on 30 September that, on the occasion of Sacred Defense Week commemorating those who lost their lives during the Iran-Iraq war of 1980-88, the Iranian military exhibited its various offensive and defensive missile systems in Tehran's Baharestan square [ *Tabnak* in Persian - a conservative website associated with Expediency Council Secretary and former IRGC commander Major General Mohsen Reza'i. URL: [www.tabnak.ir](http://www.tabnak.ir)].

## Defense Ministry Equips IRGC With Upgraded Fateh-110 Missiles \*

The Defense Ministry announced on 21 September that it had delivered the third generation of the domestically designed and manufactured Fateh-110 high-precision ballistic missiles (photos below) to the Islamic Revolution Guards Corps Aerospace Force, the Ministry of Defense web site reported the following day. The new missiles were delivered during a ceremony attended by Defense Minister **Ahmad Vahidi**, IRGC Aerospace Force commander **Amir-Ali Hajizadeh**, and IRGC Naval Forces commander **Ali Fadavi**. "The operational capabilities of the missile unit of the IRGC Aerospace Force will be remarkably enhanced by these missiles," **Vahidi** said during the ceremony [Ministry of Defense of the Islamic Republic of Iran web site in Farsi. URL: <http://mod.ir/>].

- **Hajizadeh** announced that Iran's Defense Ministry has begun equipping his units with the upgraded Fateh-110 ballistic missiles, the Fars News Agency reported on 22 September. "We have received the third generation of the Fateh-110 missile with a range of 300 kilometers [ 186.33 miles] from the Defense Ministry, and they were displayed at the parade today," **Hajizadeh** stated, adding that the test firings of the new Fateh-110 missile were successfully conducted on 25 August. The missile is a short-range, road-mobile, solid-propellant, high-precision surface-to-surface weapon with advanced navigation and control systems, he explained. **Hajizadeh** also announced that the Defense Ministry is to equip the IRGC Aerospace Force with other new missiles and military equipment and systems each month on the basis of a new contract [Tehran Fars News Agency in Persian and English - hardline pro-Ahmadinezhad news agency; headed as of December 2007 by Hamid Reza Moqaddamfar, who was formerly an IRGC cultural officer. URL: [www.farsnews.com](http://www.farsnews.com)].