
Missile Restraints in Iraq and Libya

Iraq had been limited to 150 km range missiles after the 1991 Gulf War, and it worked on several such missiles in the 1990s. One was the 1.2 ton solid-fuel al-Fatah, previously called Ababil-100, which had a 0.5 m diameter. It flew beyond 150 km in eight of its thirty-two flight tests (between September 2000 and October 2002) and reached 161 km in one test. Unable to develop a guidance system for this missile, Iraq deployed an unguided version with its army in late 2001. In total, Iraq built 100 to 120 of these missiles—60 were consumed in development and testing; 12 to 16 were fired on coalition forces; and 10 were recovered after the war.

Another Iraqi missile, the 1.8 ton liquid-fuel al-Samoud (initially also called Ababil-100), had a 0.5 m diameter. It reportedly reached 150 km in three of its forty-six flight tests (between October 1997 and September 2001). The small diameter design was unstable, and Iraq therefore discontinued the missile and developed an al-Samoud-2 with a 0.76 m diameter. This missile used an SA-2 engine (Iraq imported 380 such engines from Polish and Russian entities in 2001-2) and components from the HY-2 cruise missile (which had a 0.76 m diameter). The missile flew beyond 150 km in thirteen of its twenty-six tests (between August 2001 and November 2002), reaching 183 km in one test. Iraq built some 130 of these missiles, of which 22 to 27 were used in flight tests; UN inspectors destroyed 72 in March 2003; 5 were fired against coalition forces; 15 were damaged or captured in the war; and the remainder are unaccounted for. During the March 2003 war, Patriot missile defense interceptors reportedly hit nine of Iraq’s ballistic missiles. Missile defenses did not intercept or engage five HY-2 Seersucker cruise missiles and two unmanned air vehicles.

Beyond its al-Samoud programs, Iraq sought to buy the 280 km range SS-26 Iskander missiles from Russia in 2002. Further, in discussions with North Korea between 1999-2002, Baghdad sought technology for 1,300 km range Nodong-type ballistic missiles and 300 km range anti-ship cruise missiles. In late 2001, it signed contracts worth $9 million with (and made a downpayment of $1.3 million to) North Korean firms for missile components such as guidance and control systems and test stands. Iraq did not receive North Korean technology or missiles by the time UN inspections resumed in October 2002.

Libya declared, in December 2003, that it would eliminate its weapons of mass destruction programs and limit itself to 300 km range missiles. Libya also revealed that it had a North Korean-assisted production line for 600 km range Scud-Cs, and it shipped five complete Scud-Cs to the United States in March 2004. A press report in February 2005 noted that Libya wanted to sell its 417 Scud-Bs to the United States for $2 million each.

Iran

Iran continued testing and upgraded existing missiles, and also worked on new missiles. First, Iran conducted the sixth and seventh tests of its 1,300 km range Shehab-3 missile in July 2003 and August 2004. The missile featured an advanced nose cone in August 2004. Later, Iran declared that it had increased the missile’s range to 2,000 km. Iran again tested the Shehab-3 in January 2006 and May 2006 (some reports note that the January 2006 test involved a North Korean Nodong-B missile). Second, Iran was reportedly building a solid-fuel 2,500-3,000 km range
Ghadr missile. In May 2005, Tehran announced that it tested a solid-fuel engine having a range greater than 2,000 km. Third, Iran’s defense minister announced the cancellation of a Shemab-4 satellite launch rocket in November 2003, but, in January 2004, declared that Iran would launch a satellite within eighteen months. Iran later launched satellites aboard Russian rockets, but was also developing its own satellite launcher.

North Korea
North Korea maintained its 1999 missile test moratorium for almost seven years, but still exported and developed missiles, and eventually resumed long range missile tests. In May and August 2001, Pyongyang noted that it would not test missiles until 2003. At a September 2002 summit with Japan’s Prime Minister, it offered to extend this test moratorium beyond 2003. And during April 2003 talks in Beijing (after its January 2003 withdrawal from the NPT), Pyongyang outlined a plan to restrain its nuclear and missile programs, but this faltered.

North Korea’s missile trade with Yemen and Libya ended after 2002-03, but its missile exports with other countries continued. In November 2002, U.S. and Spanish naval vessels intercepted and then released a North Korean freighter carrying fifteen Scud missiles to Yemen. Also, new details emerged of a July 1999 interdiction of a North Korean vessel in an Indian port. This vessel was apparently heading to Libya with an assembly line for the production of Scud missiles and carried tips of nose cones, sheet metal for rocket frames, machine tools, guidance systems, and engineering drawings labeled “Scud B” and “Scud C.” Further, press reports in 2003-04 indicated that North Korea was interested in selling Scuds to Burma and Nigeria. Other reports noted that North Korea supplied Nodong missile components to Pakistan in July 2002, and that it continued missile technology collaboration with Iran.

North Korea also tested new and existing short and long range missiles. First, it tested short range coastal-defense cruise missiles (believed to be the HY-2 Seersucker) on February 24, March 10, and April 1, 2003, and again in 2004. Second, it tested a new 100-120 km range ballistic missile in May 2005 and March 2006. This was a variant of the Russian SS-21 (which North Korea reportedly received from Syria in 1996), and was North Korea’s first solid-fuel ballistic missile. Third, North Korea may have developed a Nodong-B missile derived from the Soviet SS-N-6 (a 14 ton liquid-fuel missile deployed in the 1970s). It has a closed cycle liquid propulsion engine superior to that of the original Nodong, which gives it a longer range of 3,000 km, and was reportedly tested in Iran in January 2006. Earlier, in March 2005, North Korea announced ending its missile test moratorium. Fourth, North Korea ground-tested a Taepodong-2 engine in June 2004. In July 2006, it unsuccessfully flight-tested its 4,000-6,000 km range Taepodong-2 (along with six Scud and Nodong missiles).

Pakistan
Pakistan first tested its two-stage 2,500 km range Shaheen-2 in March 2004. It again tested the missile in March 2005, April 2006, and May 2006. Pakistan also conducted the second to fourth tests of its 180 km range Abdali in March 2003, March 2005, and February 2006; the second and third tests of its 300 km range Ghaznavi in October 2003 and November 2004; the second to fifth tests of its 700 km range Shaheen-1 missile in October 2002 (two tests), October 2003 (two tests), and December 2004; and the fourth to sixth tests of the 1,000-1,500 km range Ghauri missile in May, June, and October 2004. In addition, Pakistan tested its new land-based cruise missile (the Babar or Hatf-7) in August 2005 and March 2006.

India
India first tested its two-stage 3,000-4,000 km range Agni-3 in July 2006, though this test failed. India also conducted the third test of its 2,000
km range Agni-2 in August 2004 and the second and third tests of its 700 km range Agni-1 in January 2003 and July 2004.

Further, India conducted the twenty-first to twenty-sixth tests of its 150-250 km range Prithvi-1 and Prithvi-2 missiles in March and April 2003, January and March 2004, May 2005, and June 2006. And it conducted the third to fifth tests of its 300 km range naval Prithvi-3 or Dhanush in October 2004, November 2004, and December 2005. In addition, India first tested its 290 km range Brahmos antiship cruise missile in June 2001, with nine additional tests in April 2002; February, October, and November (two tests) 2003; June, November, and December 2004; and April 2005.

Brazil, Israel, Syria, Taiwan
Brazil failed for the third time in three attempts to place a satellite in orbit when, in September 2003, its VLS rocket exploded on the launch pad two days before a planned flight. In October 2004, Brazil successfully launched a smaller two-stage VSB-30 rocket into space.

Israel's sixth launch of its Shavit rocket failed in September 2004, resulting in the loss of its Ofeq-6 satellite.

Syria tested one Scud-B and two Scud-Ds in May 2005, which were its first missile tests since 2001. In 2005, press reports noted that Syria sought to purchase but was denied 18 Russian SS-26 Iskander ballistic missiles. Other reports note that Syria sought to transfer some 30 Scud missiles to Sudan in and since January 2004.

A number of countries developed cruise missiles. Taiwan tested its first land-attack cruise missile, the 600 km range Hsiung Feng 2E, in early 2005; Iran sought to convert the Chinese-supplied Seersucker into land attack cruise missiles; China tested a new 1,500 km range Dong Hai-10 cruise missile in September 2004; and Ukrainian arms dealers sold 18 3,000 km range Kh-55 cruise missiles to Iran and China in 2001.

Missile Nonproliferation Efforts
The MTCR was chaired by Argentina in 2003-04, South Korea in 2004-05, Spain in 2005-06, and Denmark in 2006-07. It updated its technology control lists, and developed somewhat permanent chairs for its three main issues—intelligence, customs policy, and the technical annex. The MTCR's outreach efforts included technical meetings on export controls with China, Libya, Israel, and Serbia; discussions with Libya and Yemen to discourage them from buying North Korean technologies; and promoting the MTCR among regional forums such as the Arab League and the Shanghai Cooperation Organization. The MTCR also coordinated with the UN by participating in a UN experts panel on missile proliferation, coordinating with the UN counterterrorism committee, and acknowledging UN Security Council Resolution 1540 which mandated that all states adopt export controls.

The MTCR admitted Bulgaria as its thirty-fourth member in 2004, and was considering admitting nine additional states (including seven new entrants to the European Union). The MTCR also held detailed technical discussions with China, which indicated that it was willing to join the regime, but the group did not eventually approve Beijing’s membership in 2004 and 2005.

On another front, membership of The Hague Code of Conduct on Ballistic Missile Proliferation (HCOC) increased from 93 in November 2002 to 124 by June 2006. The HCOC held a technical meeting in June 2003 and held its second regular meeting in October 2003. The Philippines was elected as HCOC chair at an intersessional meeting in June 2004. The HCOC held its third, fourth, and fifth regular meetings in November 2004, June 2005, and June 2006—Morocco was elected as the group’s chair at this meeting.
In the period 2003-2006, the HCOC sought to expand its membership by creating links with the UN. Thus, the HCOC’s October 2003 plenary was held in New York just before the UN First Committee meetings, and HCOC members drafted resolutions for First Committee sessions in 2004 and 2005. The UN adopted these resolutions which invited states that had not yet subscribed to the Hague Code to join it. Further, in official communications with the UN Secretary General and the 1540 Committee of the UN Security Council, the HCOC chair highlighted the complementary work of the UN and the HCOC. And a September 2005 HCOC outreach seminar in Manila sought to heighten awareness of the HCOC and encourage Asian countries to subscribe to it.

In another nonproliferation effort, 11 countries initiated the Proliferation Security Initiative (PSI) in 2003. The initiative sought to interdict ships and aircraft carrying missiles and weapons of mass destruction to states of concern. In May 2005, Secretary of State Rice noted that PSI members had conducted 11 intercepts during the previous year and had blocked missile technology transfers to Iran. In June 2005, the United States asked China to deny overflight rights to an Iranian aircraft that had landed in North Korea and was suspected of transporting missile parts.

Finally, the United States sanctioned numerous foreign firms for missile-relevant technology transfers. In 2001-04, it imposed over 110 proliferation-related sanctions (including but not solely for missile transactions), of which about 60 were on thirty Chinese entities—some 40 of these were for transactions with Iran triggered by the Iran Nonproliferation Act.