

NUCLEAR- AND MISSILE-RELATED TRADE AND DEVELOPMENTS FOR SELECTED COUNTRIES, JULY-OCTOBER 1997

by Michael Barletta, Clay Bowen, Kimber Cramer, and R. Adam Moody

The material in this overview is drawn from selected abstracts that appear in the Center for Nonproliferation Studies' nuclear and missile databases. Transactions of nuclear and missile technologies, parts, and materials are listed according to the recipient country. Other developments are listed according to the country where the event or development took place.

ASIA

AUSTRALIA

Nuclear

On 9/23/97, Australia became the first country to adopt the International Atomic Energy Agency's (IAEA) "Additional Protocol on the Program to Strengthen the Effectiveness and Improve the Efficiency of Safeguards," commonly called "93+2." The protocol will become part of its safeguards agreement with the IAEA. It will be signed by a number of other countries at the IAEA General Conference in Vienna the week of 9/29/97.

Uranium Institute News Briefing, 9/23/97.

Missile

On 8/25/97, Australia announced that it is considering the acquisition of a long-range cruise missile such as the U.S.-built BGM-109 Tomahawk. A spokesperson for Australia's defense ministry said that studies are continuing but no purchase is imminent. Analysts believe that such an acquisition by

Australia could trigger an arms race in Southeast Asia.

Bradley Perrett, *Reuter*, 8/25/97.

CHINA

General

China's Computer Institute of the National Defense Science and Technology University has developed the Galaxy-III, a supercomputer capable of performing 13 billion calculations per second.

Beijing Review, 8/11/97-8/17/97, p. 31.

According to a U.S. Office of Naval Intelligence (ONI) report on global maritime challenges, China has been shipping critical military technology and material to Iran and Iraq to be used in their nuclear, chemical, and biological weapons programs. For the 10/97 U.S.-Sino summit, the Clinton administration was working to lift the ban on exporting nuclear technology to China by putting into effect the 1985 U.S.-Sino nuclear cooperation agreement.

Bill Gertz, *Washington Times*, [Online] <http://www.washtimes.com>, 9/2/97.

China will return a Sun Microsystems supercomputer to the United States, which Sun exported to China in 2/97 without a license. The supercomputer was supposed to be sent to the China Scientific Institute in Beijing but was directed instead to the National Defense Science and Technology University. The supercomputer may be used in the design of nuclear weapons and ballistic missiles.

David E. Sanger, *New York Times*, 9/12/97, p. A17.

Nuclear

The U.S. Arms Control and Disarmament Agency (ACDA) 1997 *Annual Report* noted that: "On May 11, 1996, China stated that it would provide no assistance to unsafeguarded nuclear facilities. Our current information does not provide a basis for concluding that China has acted inconsistently with that statement. Questions remain about contacts between Chinese entities and elements associated with Pakistan's nuclear weapons program. However, the information is not sufficient to reach a judgment of non-compliance with the NPT."

ACDA Annual Report, 1997, pp. 89-90.

At its first meeting in Moscow, in early 7/97, the Chinese-Russian bilateral subcommittee on nuclear issues signed contracts to build two VVER-1000 pressurized water reactors (PWRs) in Lianyungang, Jiangsu province. Russian companies Atomenergoexport and Zarubezhatomenergostroy are cooperating with the China National Nuclear Corporation (CNNC) and the Chinese Nuclear Energy Industry Corporation (CNEIC) on technical aspects of the project.

Nuclear News, 7/97, p. 18.

A senior U.S. diplomat, speaking at a conference hosted by the Carnegie Endowment for International Peace, said that the United States has protested "at the highest levels" against China's plan to build a uranium hexafluoride plant in Iran. A former Clinton administration official added that the deal involved two facilities: a "gas-to-metal plant", which has already been built, and the uranium hexafluoride facility.

Iran Brief, 7/3/97, p. 1.

The U.S. Central Intelligence Agency released a report stating that China is currently the world's leading exporter of ballistic missile, nuclear, chemical, and biological weapons technologies to Third World countries. The report said that the leading importers of Chinese technologies are India, Iran, Pakistan, and Syria.

Tim Weiner, *New York Times*, 7/3/97, p. A8.

On 10/21/97, Chinese Foreign Ministry spokesman Shen Guofang said that nuclear cooperation with Iran was stalled due to contract disputes. The announcement came just before the 10/97 Sino-U.S. summit.

Washington Times, 10/22/97, p. A12.

Missile

A classified report from the U.S. National Air Intelligence Center says that China is replacing its CSS-2 (DF-3) liquid-fueled, 2,700 km-range ballistic missile with two versions of the solid-propellant CSS-5 (DF-21): the "Mod 1" and "Mod 2." The report, leaked to the press, describes the Mod 1 as a mobile missile with a range of 2,150 km.

The Mod 2 is a developmental intermediate-range ballistic missile with advanced radar guidance. Upgrades to the CSS-5 are being made at: the Tonghua launch complex near the North Korea border; the Lianxiwang launch complex opposite Taiwan; the Jianshui launch complex near the Vietnam border; and the Datong field garrison in central China.

Bill Gertz, *Washington Times*, 7/10/97.

Officials at the U.S. Department of Defense (DOD) are attempting to block the export of high-temperature furnaces by the U.S. corporation Consarc to China's Northwest Institute and the Shengyang Institute of Metals Research. A license was requested for the export of electron beam, vacuum arc, and cold-hearth refining (or skull) furnaces. A letter signed by Northwest President Zhou Liang stated that the furnaces would be used for the melting of rare metals for research. However, the equipment has military applications and could be used in the miniaturization of warheads and the refinement of MIRV (multiple independently targetable re-entry vehicles) technology.

Barbara Opall, *Defense News*, 7/28/97-8/3/97, p. 1.

China could improve the capabilities of its cruise missiles with technology it will acquire in a deal with Pratt & Whitney Canada (P&WC). The China National South Aero Engine and Machinery Company (SAEC), a subsidiary of Aviation Industries Corporation of China, signed a contract with P&WC on 1/15/97 to produce components for small gas-turbine engines. U.S. defense officials and analysts say the engines could be modified for use in cruise missiles, pointing out that production will take place in SAEC's Zhuzhou factory, which builds WP-11 cruise missile engines.

Nigel Holloway, *Far Eastern Economic Review*, 8/14/97. Pratt & Whitney Company, [Online] <http://www.pwc.ca>, 1/15/97.

On 8/20/97, China successfully launched its new Long March 3B (LM-3B) from the Xichang Satellite Launch Center in southwest China. The LM-3B, designed and developed by the China Academy of Launch Vehicle Technology, is a three-stage, liquid-

fueled rocket with a five-ton payload capacity.

China Daily, [Online] <http://www.chinadaily.co.cn/cndy>, 8/21/97.

Since 1995, the U.S. Defense Intelligence Agency (DIA) has been investigating charges made by an employee of the Army Testing Laboratory in Aberdeen, New Mexico, that two fellow employees were selling classified missile information to China. The U.S. Federal Bureau of Investigation (FBI) is conducting a related investigation. It has information indicating that the spy network linking Aberdeen to China may first have been opened during the Reagan administration, which covertly sought to build up Iraq's military as a counterweight to Iran. This policy continued during the Bush administration. FBI investigators were told that the 1990 assassination of Canadian artillery expert Gerald Bull in Brussels may have been ordered by Iraq when it discovered that Bull was selling information to China. Previously, Bull had access to Aberdeen's supercomputers in order to do weapons-related research. At the time of his death, he was developing the so-called "supergun" for Iraq and there had been widespread speculation that he had been killed by Israeli agents.

Stephen Green, *San Diego Union Tribune*, 9/20/97, p. A10.

On 9/29/97, China announced that it had successfully tested a new long-range surface-to-air missile (SAM) with radar-evasion capabilities. The test was held at an undisclosed desert site.

Jane Macartney, *Washington Times*, 9/29/97, p. A12.

INDIA

Nuclear

Prime Minister Inder Kumar Gujral told the parliament on 8/7/97 that India will not abandon its nuclear program. "We are not going to be deterred in following our nuclear policy whether there is pressure, direct or indirect," Gujral said. He added that India had become self-reliant in the production of heavy water.

Harbaksh Singh Nanda, UPI, 8/7/97. *Indolink: Headline News from India*, [Online] <http://www.indolink.com>, 8/12/97.

India is being forced to develop an indigenous fast breeder reactor program because of an effective boycott by the world's natural uranium suppliers, officials at India's Department of Atomic Energy (DAE) said in 7/97. Indian officials blamed the Nuclear Suppliers Group (NSG) for having organized the boycott, which prevents acquisition of natural uranium for India's unsafeguarded CANDU-type pressurized heavy water reactors (PHWRs). Officials of the NSG said that India cannot obtain uranium from its members because the latest version of INFCIRC-225, used as NSG guidelines, states that any export of uranium or other "source material" may be made only on condition of full-scope safeguards in the recipient state.

Mark Hibbs, *NuclearFuel*, 8/11/97, p. 8.

Prime Minister Gujral on 8/15/97 stated his country's opposition to a global treaty banning nuclear testing, saying: "We will not sign the CTBT under any pressure unless it applies equally to all and countries that have these weapons agree to destroy them."

Reuter, 8/15/97.

Prime Minister Gujral said on 9/9/97 that India has the capability to make nuclear weapons and would retain the nuclear option in order to meet "unforeseen circumstances."

The Indian Express, [Online] <http://www.expressindia.com>, 9/9/97.

Hans Blix, director-general of the International Atomic Energy Agency (IAEA) said in New Delhi on 9/8/97 that India's attempt to acquire foreign nuclear expertise could be blocked because of its refusal to sign the Treaty on the Non-Proliferation of Nuclear Weapons (NPT).

The Hindu, [Online] <http://webpage.com/hindu>, 9/9/97.

A fuel reprocessing plant in Kalpakkam has completed "cold commissioning" and in 9/97 was in the last phase of pre-commissioning trials. This will be India's third plutonium producing facility, following those at Trombay and Tarapur. The Kalpakkam reprocessing plant (KARP) will introduce a "more sophisticated hybrid maintenance con-

cept" by which hardware maintenance will be done in shielded cells using remote handling equipment. KARP is also capable of reprocessing spent fuel from PHWRs. India is also developing a nuclear export capability. According to *The Times* of Mumbai, the first shipment of Indian nuclear fuel to be exported to the United States will consist of 40 tons of zirconium oxide for the production of fuel bundles for nuclear reactors.

The Times (Mumbai), 9/9/97, p. 13; in FBIS-NES-97-252, 9/9/97.

Russian Minister of Atomic Energy Viktor Mikhailov said on 9/10/97 that Russia and India would sign an agreement to build a nuclear power plant at Koodankulam. The Russian Ministry of Atomic Energy (Minatom) plans to supply two light-water reactors to India. The agreement is likely to be finalized in 1998, after which construction can begin.

Leonid Kotov, ITAR-TASS (Moscow), 9/10/97; in FBIS-SOV-97-253, 9/10/97; *Interfax* (Moscow), 9/10/97; in FBIS-SOV-97-253, 9/10/97; *Deccan Herald* (Bangalore); 9/9/97, in FBIS-NES-97-252, 9/9/97.

India announced that it will allow international inspection of its two nuclear power reactors at Kakrapar and Gujarat. Prime Minister Gujral said the opening of the plants is part of an ongoing policy of peaceful use of nuclear energy and that the decision has been "unduly highlighted" by the news media.

All India Radio Network (Delhi), 9/16/97; in FBIS-NES-97-259, 9/16/97; *All India Radio Network*, (Delhi) 9/18/97; in FBIS-NES-97-261, 9/18/97.

Prime Minister Gujral described his country as surrounded by nuclear weapons, but said India had no desire to "go nuclear" unless forced to. "In the east, there is China, a full-fledged nuclear power. In the south, there is Diego Garcia, an American nuclear power. In the west, (the) Gulf region has been nuclearized by alien powers, and to the north, the world is aware of Pakistan's nuclear weapons program," Gujral said in New York on 9/23/97. He said India would support any global disarmament agreement that was "genuinely nondiscriminatory," but India would not give up its nuclear option unless

"the world around us is made nuclear-weapons free."

Deccan Herald (Bangalore), 9/25/97; in FBIS-NES-97-268, 9/25/97; *All India Radio Network*, (Delhi) 9/24/97; in FBIS-NES-97-267, 9/24/97.

Missile

India intends to resume development of a long-range missile, according to Indian Defense Minister Mulayam Singh Yadav. Despite strong international opposition, India has "decided to accord high priority to the next phase of the Agni program," he said. Work on the Agni missile, which has a range of 2,500 km (1,550 miles), was halted in 1994 after criticism from the United States and other Western countries that India was engaging in an arms race in South Asia. Defense scientists said they needed at least six-to-eight more tests to perfect its accuracy and to achieve its optimum range. The scientists said the Agni program's next phase would be development of solid fuel, unlike the technology demonstrator, which used a "fairly inefficient" mix of solid and liquid fuels.

Washington Times, 8/11/97, p. A14. Rahul Bedi, *Jane's Defence Weekly*, 8/6/97, p. 3.

Wilson John, an official at India's Defence Research Development Organization (DRDO) said that Indian defense engineers were working on cruise missile technology. He described a cruise missile design based on the Pilotless Target Aircraft platform. It would have a turbofan engine and carry a 1,200-1,800 kg warhead to a distance of 2,500 km (1,550 miles). The proposed cruise missile could be launched from air-, sea-, or land-based platforms.

Current Missile News, [Online] <http://www.cdiss.org>, 8/18/97.

Defense Minister Mulayam Singh Yadav said that, if necessary, India's Prithvi SSM could be moved close to the border with Pakistan in less than two hours. "The missiles have not been made to put in a museum," he said.

Jane's Defence Weekly, 9/10/97, p. 27.

India announced on 9/28/97 that it has started producing the Prithvi surface-to-surface missile (SSM). The DRDO announced two versions of the missile: one with a 150 km (95 miles) range to be deployed by the army, and

a 260 km (160 miles) version for the air force. The government said its missile program was a response to military build-ups in China and Pakistan.

Jane Macartney *Washington Times*, 9/29/97, p. 11.

India conducted the eleventh flight test of its Akash (Sky) surface-to-air missile at the Chandipur range on 10/3/97. The launch was intended to evaluate the missile's command guidance system. Defense sources said the test went smoothly and the missile performed to expectations.

All India Radio Network (Delhi), 10/4/97; in FBIS-TAC-97-278, 10/5/97.

JAPAN

Nuclear

Plutonium for use in Japan's mixed-oxide (MOX) fuel program was shipped from Cogema's La Hague processing plant in France, to Belgonuclaire's Dessel plant in Belgium. The 220 kg of plutonium is expected to be shipped to Japan by the end of 1997. Toshiba will produce the MOX fuel.

Nikkan Kogyo Shimbun (Tokyo), 7/7/97, p. 7; in FBIS-JST-97-037, 7/7/97.

On 7/8/97, Japan deposited its instrument of ratification of the Comprehensive Test Ban Treaty (CTBT) at the United Nations. Japan is the first of 44 countries required to ratify the treaty before it can enter into force.

Kyodo, 7/9/97; in FBIS-TAC-97-190, 7/9/97.

Missile

The Japan Defense Agency (JDA) plans to cut its annual budget by \$7.8 billion by the year 2000. Because of the planned decrease, the JDA has deferred a decision to work with the United States on a ballistic missile defense program.

Nihon Keizai Shimbun (Tokyo), 8/28/97, p. 2; in FBIS-EAS-97-268, 9/25/97.

KAZAKSTAN

Nuclear

Kazakstani and Russian officials have arrived at "firm plans" to build a nuclear power plant in Kazakstan, although no date to begin construction has been announced. The

power station will cost approximately \$5 billion and have six Russian 640 MW VVER reactors. The new power plant will be located 400 km north of Almaty, near Lake Balkash. Zarubezhatomenergostroy, the Russian state enterprise that designs and builds reactors for export, will act as general contractor for the project.

NucNet Flash News, [Online] <http://www.aey.ch/nucnet>, 8/27/97. *Nuclear News*, 9/97, pp. 28, 29. Revmira Voshchenko, RIA-Novosti (Almaty), 8/5/97.

KOREAN PENINSULA ENERGY DEVELOPMENT ORGANIZATION (KEDO)

Japan will pay 20 percent of the cost of supplying North Korea with light-water reactors. *Asahi Shimbun* reported that Japan will pay \$1 billion of the estimated \$5 billion construction cost through a long-term credit arrangement.

Chosun Ilbo (Seoul), 7/7/97, p. 3.

On 7/22/97, 17 South Korean personnel went to North Korea to begin work on the light-water reactor project at Sinpo. On 7/26/97, 63 additional South Korean workers will arrive. The South Korean Unification Ministry said that construction equipment weighing 9,000 tons is scheduled to be shipped to North Korea on 7/25/97.

Reuter, 7/22/97.

KEDO opened a liaison office at Sinpo on 7/28/97. The office is staffed by Lee Hyon Joo and Seo Hoon of South Korea's Foreign Ministry, Takane Kazumasa of Japan's Foreign Ministry, and John Hogg and Dennis Dronoy of the U.S. State Department.

Reuter, 7/28/97.

On 8/19/97, KEDO and North Korea held a groundbreaking ceremony marking the start of construction of the light-water reactors to be built in North Korea under the terms of the 1994 U.S.-DPRK Agreed Framework. Ambassador Paul Cleveland, the U.S. representative to KEDO's executive board and chairman of the board, attended the ceremony and delivered a message from U.S.

President Bill Clinton. A delegation of over 100 officials and journalists from nine countries and the EU attended the ceremony.

The White House, Office of the Press Secretary, 8/19/97. Shin Na, Voice of America, 8/19/97.

Work resumed on 10/6/97 at the Sinpo construction site after a five-day suspension. The halt was due to the discovery of a torn picture of North Korean leader Kim Jong Il in the wastebasket of a South Korean worker.

Korean Overseas Information Service, [Online] <http://www.kois.go.kr>, 10/7/97.

KYRGYZSTAN

Nuclear

The Kyrgyzstani Customs Inspection office said that the United States and Kyrgyzstan will work together to stop the flow of nuclear arms production technologies across the Kyrgyzstani border. The United States will finance installation of equipment at customs checkpoints and prepare courses for customs officials on how "to apprehend the passage of technologies pertinent to nuclear arms production." The agreement was made during a visit of representatives from the U.S. Federal Bureau of Investigation (FBI) and the Customs Service. Kyrgyzstani officials discussed strategies for the nonproliferation of nuclear arms and technologies and the "creation of the appropriate legal base" in Kyrgyzstan with the U.S. delegation.

Interfax (Moscow), 9/17/97; in FBIS-TAC-97-260, 9/17/97.

NORTH KOREA

Nuclear

The U.S. Arms Control and Disarmament Agency's (ACDA) 1997 *Annual Report* stated that: "The United States has determined that North Korea has not complied fully with its NPT Article III (safeguards) obligations. Serious questions remain regarding... the possibility that North Korea violated its NPT Article II obligation 'not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices.' However, the signing of the Agreed Framework is significant as it requires North Korea to resolve these concerns. ...(North Korea) has not allowed 'special inspections'

pursuant to the NPT.... North Korea's efforts to obstruct the full implementation of full-scope IAEA safeguards required by Article III of the NPT continue, as does concern about North Korea's nuclear intentions."

ACDA Annual Report, 1997, pp. 89, 90.

North Korean defector Hwang Jang Yop conceded that he did not have proof that North Korea had nuclear weapons at his first major press conference in Tokyo on 7/10/97. He added, however, that countries such as South Korea would be wise to assume that such weapons exist.

New York Times, 7/11/97, p. A10.

According to the South Korean Ministry of National Unification, 90 percent of North Korea's 8,000 spent fuel rods have been canned for storage. The canning operation will be completed by the end of 1997.

NAPSNET Daily Report, 8/18/97.

Missile

North Korea's 5/23/97 test launch of its new AG-1 anti-ship cruise missile prompted many sources to portray it as a formidable new weapon. However, U.S. defense officials said the missile uses "unimpressive, old technology" from Russian Styx and Chinese Silkworm missiles. The test launch, from the An River army barracks site, was detected by a U.S. military satellite.

James R. Asker, Aviation Week & Space Technology, 7/7/97, p. 21.

According to U.S. diplomats, Chang Sung Il, North Korea's ambassador to Egypt who recently defected to the United States, is unlikely to possess detailed information on North Korean weapons exports to the Middle East. The diplomats said that the export of ballistic missiles, anti-tank weapons, and other arms is usually conducted outside the purview of North Korea's embassies by using dummy corporations and other intermediaries. However, Chang may shed light on the state of North Korea's relations with weapons-seeking countries in the region.

R. Jeffrey Smith, Washington Post, 8/27/97, p. A1.

On 9/11/97, North Korea agreed to participate in Korean Peninsula peace talks scheduled for 9/18/97 in New York. Pyongyang

agreed despite the defection of two North Korean diplomats to the United States and the subsequent cancellation by North Korea of U.S.-DPRK missile talks, which were to have occurred on 8/27/97. The United States will meet separately with North Korea during the talks to discuss the defection and the canceled missile talks.

CNN Interactive, [Online] <http://www.cnn.com>, 9/11/97. Reuter, 8/27/97.

North Korea has begun deploying military units with equipment to transport the Nodong-1 ballistic missile. U.S. Pacific Command Admiral Joseph Prueher said the preparations indicate either imminent deployment of the missile, training exercises, or a ruse. Prueher said that no missiles had been sighted, only troops and trucks.

Bill Gertz, Washington Times, 9/27/97, p. A3.

South Korea's 1997-98 Defense White Paper includes information regarding North Korea's missile developments. The Nodong-1 missile, with a range of 1,000 km and the capability to carry chemical or nuclear warheads, is believed ready for deployment. The White Paper also said that North Korea is developing 1,500 km-range and 4,000 km-range missiles.

Bill Tarrant, Reuter, 10/6/97.

PAKISTAN

Nuclear

Pakistan's top nuclear scientist, Qadeer Khan, stated on 8/12/97 that the country's nuclear program would continue despite criticism from the West. "It is so central to our security, and national security is so dear to us, that we don't care who is saying what about our peaceful program," Khan said. He added that efforts of scientists had placed Pakistan in the "club of six or seven countries capable of enriching uranium up to 95 percent for use in weapons of mass destruction." He refused to respond when asked if Pakistan actually possessed a nuclear device.

Imtiaz Gul, Washington Times, 8/13/97, p. 1.

India accused Pakistan in 8/97 of developing nuclear warheads for medium-range missiles with help from China. A lawmaker

asked Indian Prime Minister Inder Kumar Gujral if the government had verified reports that Pakistan had deployed Chinese-built M-11 missiles near the India border. Kamala Sinha, junior foreign minister, replied in writing that the government is "aware of credible reports in this regard." During the week of 8/4/97, India accused China of supplying M-11 missiles to Pakistan and helping Islamabad build a missile factory.

Reuter, 8/14/97.

U.S. officials have been negotiating with the Chinese Ministry of Foreign Affairs, urging China not to supply Pakistan with equipment that can be used to reprocess spent fuel from its plutonium-producing Khushab reactor.

Mark Hibbs, Nucleonics Week, 8/14/97, pp. 8-9.

The Chashma nuclear power plant, Pakistan's second, will begin generating electricity in 1999 according to Pakistan Atomic Energy Commission Chairman Ishfaq Ahmed. The 300 MW pressurized water reactor (PWR) is based on the Chinese-designed Qinshan-1, and is being constructed by Chinese vendors and Pakistani subcontractors. The project includes some technology transfer to enable Pakistani engineers to design their own plants.

Nucleonics Week, 8/28/97.

Prime Minister Nawaz Sharif acknowledged, on 9/7/97, that "The issue of [Pakistan's] nuclear capability is an established fact. Hence the debate on this issue should come to an end." He urged the news media not to discuss it further. Referring to Pakistan's nuclear program, Sharif said the country had progressed significantly, and that, "we have left that stage (initial development) far behind."

Shahid Ahmed Khan, The Times of India, [Online] <http://www.timesofindia.com>, 9/8/97.

The former director-general of Pakistan's Interservices Intelligence (IS), General Hamid Gul, told a London news conference that his country was "coming to the brink" of fighting a nuclear war with India over the issue of Kashmir. He also called on the government of Pakistan-occupied Kashmir (PoK) to declare a *jihad* (holy war) over the

issue.

The Indian Express, [Online] <http://www.expressindia.com>, 9/17/97.

On 9/19/97, the Chinese government approved the sale of two 300 MW steam generators and one 300 MW stabilizer by the Shanghai Boiler Factory to Pakistan, for use at its Chashma nuclear power facility. This will be China's first export of nuclear energy equipment. Chashma is being built under contract with Shanghai Electric Corporation Group.

Xinhua, 9/19/97; in FBIS-CHI-97-262, 9/19/97.

In a speech to the United Nations on 9/22/97, Prime Minister Nawaz Sharif offered to begin discussions with India on a non-aggression pact and restraints on nuclear weapons and delivery systems. Sharif's proposal included an offer to demonstrate "mutual and equal restraint in the nuclear and ballistic (missile) fields."

Hong Kong Standard [Online] <http://www.hkstandard.com>, 9/23/97.

Pakistani Prime Minister Nawaz Sharif, addressing the U.N. General Assembly, called for the creation of a nuclear-weapon-free-zone (NWFZ) in South Asia.

Government of Pakistan, 9/24/97; in FBIS-NES-97-267, 9/24/97.

China may be supplying Pakistan with "far more 'heavy water' than it needs to run a civilian nuclear reactor," according to a letter sent to U.S. President Bill Clinton by the Washington-based Nuclear Control Institute. The heavy water could be used in Pakistan's unsafeguarded Khusab nuclear reactor and for producing nuclear weapons.

Arms Trade News, 8/97-9/97, p. 2.

Missile

India accused China on 8/7/97 of supplying ballistic missiles to Pakistan and helping it build a missile factory, according to Junior Foreign Minister Kamala Sinha. He stated that the government is "aware of (the) supply of M-11 ballistic missiles by China to Pakistan, as well as Chinese assistance to build a factory to manufacture ballistic missiles at Fatehjung, near Rawalpindi," said

Sinha.

Reuter, 8/7/97.

According to "reliable sources," the Pakistani Space and Upper Atmosphere Research Corporation (SUPARCO) has prepared a new missile for research purposes. The missile, which can be used for military as well as space applications, is expected to have a range of 1,000-1,500 km.

Jang (Rawalpindi), 10/2/97, pp. 8, 3; in FBIS-TAC-97-276, 10/3/97.

SOUTH KOREA

Missile

Air Force Chief of Staff Lee Kwang Hak reported that an early warning system to detect North Korean Scud missile launches will be deployed in the Total Air Control Center at Air Force Operations Headquarters. South Korea will also introduce the next generation SAM-X, which is reportedly capable of intercepting Scud missiles.

Korean Overseas Information Service, [Online] <http://www.kois.go.kr>, 10/9/97.

TAIWAN

Nuclear

A Taiwanese newspaper reported that in 1967 the government planned to develop its own nuclear weapons force, but abandoned the plan on the advice of Taiwanese physicist Wu Da Yu. At that time, the government had allocated \$140 million to the Ministry of National Defense for research and development of nuclear weapons.

Sing Tao News (Hong Kong), 9/22/97, p. A10; in FBIS-CHI-97-265, 9/22/97.

Missile

On 7/14/97, Taiwan's Chungshan Institute of Science and Technology confirmed that production of the Sky Sword-I surface-to-air missile (SAM) will begin in 1998. The institute also announced that the Sky Bow-II SAM will enter production before the end of 1997.

Flor Wang, Taiwan Central News Agency, [Online] <http://www.can.com.tw>, 7/15/97; in FBIS-CHI-97-196, 7/15/97.

VIETNAM

Nuclear

According to Director of the Vietnam Atomic Energy Commission Nguyen Tien, during 1993-97, 268.65 kg of depleted uranium-osmium and 516.56 kg of non-weapon-grade uranium were collected. Much of the uranium was from U.S. aircraft shot down during the Vietnam War. The Vietnamese government has alerted the International Atomic Energy Agency (IAEA).

Reuter, 9/13/97.

EUROPE

ALBANIA

Missile

On 8/7/97, Albanian police discovered 15 Chinese HY-1 (NATO designation CSSC-2 Silkworm) SAMs and surface-to-surface missiles, which had been stolen on 7/20/97, in Lazarat near Gjirokaster. According to Albanian Defense Minister Sabit Brokaj, police found the weapons, which were dismantled, in a Lazarat basement. Brokaj said the missiles were to be shipped to Greece, but the suspects changed plans due to tightened border security. The suspects were also in possession of HY-1 missile transporters, instruction manuals, and firing and guidance systems. Military officials suspect the thefts are part of an organized-crime operation. Military sources placed the value of each missile at "several million dollars." Other sources reported their price at \$50,000-100,000 each.

RFE/RL Newsline, 8/8/97. AFP (Paris), 8/7/97; in FBIS-EEU-97-219, 8/7/97. RFE/RL Newsline, 7/23/97. Ismail Xhaferri and Alexander Bregu, *Koha Jone* (Tirana), 7/23/97, p. 2; in FBIS-EEU-97-204, 7/23/97.

BELARUS

Nuclear

In Brest, Belarusian state security forces arrested members of a criminal group involved in smuggling radioactive materials and confiscated a hand-made lead container holding

about 2 kg of a radioactive substance. The group had stored the container in a border village and intended to sell it for \$100,000. An investigation is under way and police are trying to establish the origin of the material and how it was smuggled into Belarus.

Andrey Fomin, *Rabochaya tribuna*, 7/2/97, p. 4.

BULGARIA

Missile

The United States asked Bulgaria and Slovakia to destroy their OTR-23 (NATO designation SS-23 Spider) ballistic missiles, which are capable of carrying nuclear warheads. Their destruction is called for under the 1988 U.S.-Soviet Intermediate-Range Nuclear Forces Treaty. With a range of 400 km, the missiles could reach the capitals of NATO member countries such as Greece and Turkey. Classified as "Category One" under the MTCR, the OTR-23 can deliver a 500 kg payload to a range of 300 km. Bulgaria said it is re-evaluating its national security strategy because it wants to join NATO and the European security system. Slovakia has backed Bulgaria's position.

Post-Soviet Nuclear & Defense Monitor, 8/25/97, p. 10. *Jane's Defense Weekly*, 8/27/97, p. 6. Anatoliy Kurganov, *Rossiiskaya gazeta*, 9/2/97, p. 7.

CZECH REPUBLIC

Nuclear

Two Czech citizens and a Pole were arrested in the Czech Republic for possession of undisclosed amounts of "red mercury" oxide and osmium. The arrests were made in the city of Liberec after Czech law-enforcement officials discovered the materials in the suspects' car.

Fedor Ryurikov, *Obshchaya gazeta*, 10/9/97-10/15/97, p. 8.

FINLAND

Missile

Russia sold three Buk-M1 (NATO designation SA-10 Grumble) SAM systems, manufactured by Kalinin Engineering Plant in Yekaterinburg, to Finland. Kalinin is Russia's primary designer and producer of the Buk-M1. Finland tested the weapon at training sites in Kungur, Russia, and in Emba, Kazakhstan. The missiles will be delivered to

three battalions located in Helsinki, according to Kalinin representatives. The Finnish markka 1 billion transaction is largely a repayment of Russian debt to Finland. The first Buk-M1 battery will be operational in 1998.

Interfax (Moscow), 9/12/97; in FBIS-UMA-97-255, 9/12/97. Suomen Yleisradio Network (Helsinki), 9/19/97; in FBIS-WEU-97-262, 9/19/97.

GERMANY

Nuclear

Police in Springe, in Germany's Lower Saxony region, are investigating the discovery by waste disposal workers of 1 kg of radioactive plutonium. The plutonium was concealed in 100 film containers and jelly jars.

Bild (Hamburg), 9/5/97, p. 3; in FBIS-WEU-97-248, 9/5/97.

GREECE

Missile

In late 8/97, a delegation of senior Greek military officials visited Russia and discussed purchasing S-300 (NATO designation SA-10 Grumble) SAMs. However, according to Colonel-General Afanasios Tzoganis, chief of the Greek Joint Chiefs of Staff, although Greece is interested in the S-300 or "any other equivalent system," under Greek regulations the government should hold an international tender prior to signing any weapons contract.

Gayaz Alimov and Gennadiy Charodeev, *Izvestiya*, [Online] <http://win.www.online.ru/rproducts/izvestia-izvestia>, 8/29/97.

MOLDOVA

Nuclear

Moldova agreed to allow the transport of nuclear fuel across its territory to Bulgaria's Kozloduy nuclear power plant, according to Moldovan Ambassador to Bulgaria Mihai Koshkodan. Bulgaria's cabinet drafted an agreement on nuclear fuel transportation, which will be coordinated with Moldova, Russia, and Ukraine. The Moldovan and Ukrainian governments previously required that official permission be obtained for each shipment, which hindered Bulgarian fuel transport.

Bulgarian Press Digest, 8/27/97, p. 1.

POLAND

Nuclear

The newspaper *Rzeczpospolita* reported that the secret services "picked up the trail of illegal uranium traffickers" trading in Poland. One report suggested that secret service agents had wanted to pose as uranium buyers but were denied the opportunity by officials because such transactions would cost "millions of dollars." A secret service spokesman refused to comment on the report, saying that his department had dealt with only "four cases of illegal uranium trafficking over the past seven years."

RFE/RL Newswire, 7/2/97.

RUSSIA

Nuclear

The Russian government agreed to construct a mixed oxide fuel (MOX) plant in Russia, together with the French and German companies, Cogema and Siemens. Construction is scheduled to begin in 1999, with operation in 2001 or 2002. The reactor will use weapons-grade plutonium and produce 1.3 tons of fuel annually. Construction costs are estimated at \$300 million.

Nuclear Engineering International, 7/97, p. 6.

Russian police found 21 metal containers of Sodium-22, Strontium-90, Cobalt-60, and "plutonium-268" [likely Plutonium-238] on the property of a local construction company in Serov, Yekaterinburg region. The volume of each container was 1 cubic decimeter. Police suspect that the radioactive sources, which were previously used in instruments and designed for educational physics experiments, were stolen from a school and then later abandoned. The containers, whose service lives expired in 1994, will be delivered to the Russian company Radon for storage.

Oblastnaya gazeta (Yekaterinburg), 7/31/97, p. 1.

According to Major-General Aleksandr Rodionov, Russian Federal Security Service (FSB) regional department chief of the Leningrad military district in St. Petersburg, FSB agents confiscated 5 g of osmium and 450 g of uranium. The unnamed suspects in the case planned to smuggle the material

abroad.

Yuriy Klenov, *Krasnaya zvezda*, 8/1/97, p. 2.

Russia lacks control over the movement of radioactive materials across its borders due to outdated equipment and poorly trained personnel at customs points, according to Nikolai Cherepanov, head of the Urals Customs Administration of Russia's State Customs Committee (SCC). The SCC replaced the Federal Border Service (FBS) in 1995. The SCC has proposed that the "Yangar" detection system be used. However, this technology is unable to detect radioactive materials if a person walks through the system slowly. Cherepanov said that the best method to use in smuggling fissile material would be to transport it in potash fertilizer. Potassium-40, found naturally in the fertilizer, emits radiation, so higher levels of radiation would not arouse suspicion.

Nikolai Cherepanov, *Yadernyy kontrol*, Spring-Summer 1997, pp. 13, 14.

On 8/18/97, the U.S. CIA issued a "high-priority, classified alert" from the Nuclear Test Intelligence Committee (NTIC), an inter-agency scientific group, saying that on 8/16/97 Russia probably conducted a nuclear test on Novaya Zemlya, an Arctic island in the Kara Sea. The Novaya Zemlya site came under suspicion when CIA satellite photographs taken between 8/14/97 and 8/16/97 showed workers lowering "test equipment" into the ground with "diagnostic cables." However, U.S. intelligence officials said the CIA subsequently examined its overt and secret intelligence sources near the test site and found nothing to verify its original finding. Moreover, the CIA found no evidence of unusual radioactivity, underwater blast, underwater drilling, or any "extraordinary activity of any kind" before or after the event. Russia stated that it conducted non-fission experiments connected with its nuclear weapons program on 8/9/97 and 8/23/97 on Novaya Zemlya. Data suggest that the epicenter of the seismic event, probably an earthquake, was located about 80 miles southeast of Novaya Zemlya.

Bill Gertz, *Washington Times*, 8/28/97, p. 1. R. Jeffrey Smith, *Washington Post*, 10/20/97, p. 1. Yuri Shchekochikhin, *Novaya gazeta ponedelnik*, 9/22/97, pp. 1, 2; in FBIS-TAC-97-272, 9/29/97.

Russian Minister of Atomic Energy Viktor Mikhailov said that beginning in 1998, Russia will increase its natural uranium exports. By 12/98, Russia will increase exports by 25 percent, and by 100 percent by 2000, a \$3.5 billion increase. Countries expected to increase their imports of Russian natural uranium include China, Finland, Germany, Japan, and Korea. "We have set our sights on supplying the market in Southeast Asia that will become the main consumer of uranium ore in the twenty-first century," Mikhailov said.

Delovoy mir, 9/4/97, p. 5. *Kommersant daily*, [Online] <http://win.www.online.ru/rproducts/kommersant-daily-month/>, 9/4/97.

In an interview with a U.S. television network, former Russian Security Council Secretary General Aleksandr Lebed said that a number of atomic demolition munitions (ADMs) manufactured by the Soviet Union might be missing. ADMs are designed to destroy buildings, base camps, command centers, and bridges behind enemy lines. Lebed said he feared they had been sold, stolen, or acquired by terrorists, and called for a thorough investigation of their whereabouts. Both Russian and U.S. news media reported officials saying that Lebed raised the issue to keep his presidential hopes alive and stay in the public spotlight. Russian Prime Minister Viktor Chernomyrdin dismissed Lebed's claims as "absolute stupidity." On 10/1/97, Lieutenant General Igor Valynkin, chief of the Russian Defense Ministry's 12th Directorate, which controls nuclear weapons, said at a news conference that Russia does not have such weapons at its disposal, and therefore could not have "lost" them. In a subsequent interview, Lebed said: "As for their number, I can't say. When I was asked about the number (of ADMs) I said 'I don't know, maybe 100, maybe 500.'"

Steve Kroft, CBS "60 Minutes," 9/7/97. Warren P. Strobel, *Washington Times*, 10/2/97, p. A3. Interfax (Moscow), 9/8/97; in FBIS-TAC-97-251, 9/8/97. Yevgeniy Krutikov, *Segodnya*, 10/1/97, p. 3. Gareth Jones, Reuter, 9/25/97. Vladimir Zaynetdinov, *Izvestiya*, 9/25/97, p. 2; in FBIS-TAC-97-268, 9/26/97. Floriana Fossato, RFE/RL Newline, 9/30/97. MSNBC Interview With Aleksandr Lebed, [Online] <http://www.msnbc.com>, 10/2/97. Interfax (Moscow), 9/13/97; in FBIS-TAC-97-256, 9/13/97. Yuri Shcherbak, *Washington Times*, 9/10/97, p. A18. Yevgeniy Bay, *Izvestiya*, 10/4/97, p. 2; in FBIS-TAC-

97-276, 10/3/97.

Russian law enforcement officials in the North Caucasus confiscated 3.8 kg of uranium. An investigation led to the arrest of several residents of Ivanov, Stavropol, and Vladikavkaz. The lead-lined container of uranium, which was allegedly stolen from Sarov (Arzamas-16) in 1994, was seized from a 36-year-old resident of Ivanov. The uranium had been offered for sale in Moscow and the Baltic states.

Kabardino-balkarskaya pravda (Nalchik), 9/20/97, p. 1. Thomas Nilsen, *Bellona: Nuclear Chronicle From Russia*, 9/21/97, p. 5.

U.S. administration officials said that one of five U.S.-made supercomputers sold to Russian nuclear facilities at Chelyabinsk-70 and Arzamas-16 was missing. William A. Reinsch, U.S. Commerce Department undersecretary for export administration, said Russia was denying U.S. investigators access to the nuclear weapons facilities. In 7/97, Yuri Buykin, an official at the Russian Ministry of Foreign Economic Relations, informed Reinsch that one of five supercomputers inadvertently sold to Russian research labs was not at either facility. Reinsch said Buykin might have told him that the missing computer is "in storage," but Reinsch could not remember the specifics of the conversation. IBM and Silicon Graphics, two U.S. computer manufacturers, sold the supercomputers to Russia in late 1996 and early 1997 without appropriate export licenses.

Bill Gertz, *Washington Times*, 10/10/97, pp. A1, A11.

A container of Radium-226, which is used for spectral analysis of rock samples, was reported missing near the city of Kushva in the Sverdlovsk region. The material was last used on 7/30/97 and then placed in storage. Local law enforcement officials are working with the FSB and the State Nuclear and Radiation Safety Supervision Committee (Gosatombnadzor) to locate the material.

Segodnya, [Online] <http://home.eastview.com/news/sg/>, 10/29/97.

Missile

Russia completed the fourth and final successful test launch of the RS-12M1/2 (NATO designation SS-X-27) ballistic missile at the Plesetsk cosmodrome. Russia will declare the missile, an upgraded version of the SS-25 Sickle, operational by the end of 1997, and then begin serial production of the "single-warhead, three-staged, solid-fueled missiles." The missile will become the only ICBM in Russia's Strategic Rocket Forces (SRF) by 2000. The lighter, solid-fuel missiles are replacing heavier liquid-fuel ones. The RS-12M has a range of 10,500 km. According to Commander-in-Chief of Russia's SRF Colonel General Vladimir Yakovlev the RS-12M will be the "nucleus of Russia's future nuclear deterrent." The missile is five to six years ahead of foreign solid-fueled ICBMs. Half the missiles will be deployed on SS-25 mobile launchers, while the remainder will be housed in silos vacated by RS-20 (NATO designation SS-18 Satan) ICBMs, which are no longer used.

Nikolai Novichkov, *Jane's Defense Weekly*, 7/16/97, p. 3. *Flight International*, 7/16/97-7/22/97, p. 21. Russian Public Television First Channel Network (Moscow), 9/21/97; in FBIS-TAC-97-264, 9/21/97. *Monitor*, 7/10/97.

In 8/97, Russia unveiled a new air-defense missile system, the S-300PMU2 Favorit (NATO designation SA-10 Grumble), at the international aerospace show MAKS-97 at the Zhukovskiy airfield outside of Moscow. The Almaz Central Design Bureau and the Fakel Design Bureau, which joined forces on the project and formed the industrial finance group Oboronitelniye Sistemy, developed the Favorit. Vladimir Svetlov, head of the Fakel design bureau, said the Favorit is superior to the U.S. Patriot system because it can destroy the warhead of an approaching missile in mid-air. The Favorit has a more powerful warhead than its predecessors and has a range of 200 km. It is designed to defend against attacks by cruise missiles, modern aircraft, and tactical ballistic missiles. According to Svetlov, this would prevent "large casualties from a warhead hitting a city." According to Russian specialists, the Favorit will become the backbone of Russian air-defense forces in the twenty-first century.

Washington Times, 8/24/97, p. 6. *Baltic Times*, 8/29/97-9/9/97. *Kommersant-daily*, [Online] <http://win.www.online.ru/rproducts/commersant-daily-month>, 8/19/97. Yuri Shipilov, *Krasnaya zvezda*, 8/13/97, p. 5.

An investigative report conducted by the Center for Policy Studies in Russia told how 30 gyroscopes, used to guide ballistic missiles, ended up in Iraq. The report says the gyroscopes were transferred through middlemen and ultimately retrieved from a Tigris River canal near Baghdad by U.N. inspectors on 12/9/95. The report suggests that Russian export controls were ineffective in preventing the shipment, and that the Russian defense-industrial complex may be an "easy target" for smugglers. A spokesman for the center said that his research shows with "100 percent certainty" that the gyroscopes came from the Scientific Testing Institute of Chemical Machine Building in Sergiyev Posad. The facility is a high-security military plant that dismantles ballistic missiles from Russian submarines under the START I arms control treaty.

David Hoffman, *Washington Post*, 9/12/97, p. 4.

Russian arms producer Mashinostroyeniya announced that it is preparing to export its new Yakhont supersonic anti-ship missile (ASM) to the Middle East and Asia. The missile can travel at twice the speed of sound at very low altitudes, which makes it difficult to detect by radar, and has a range of 120-300 km. The Yakhont can be launched from ships, submarines, or land-based facilities. It is equipped with artificial-intelligence technology that allows it to rank targets by importance and then formulate a plan of attack in coordination with other missiles, thereby preventing multiple strikes on a single target. The Yakhont is expected to be introduced into the market in 2000-01.

Nikolai Novichkov, *Jane's Defence Weekly* (Moscow), 8/6/97, p. 10. *Pravda*, 8/13/97, p. 2. Dmitriy Litovkin, *Krasnaya zvezda*, 9/13/97, p. 5.

UKRAINE

Nuclear

Negotiations between Kazakstan, Russia, and Ukraine to create a trilateral joint-stock company to produce nuclear fuel for Ukrainian nuclear power plants have stalled. A spokesman for the Ukrainian Nuclear Regulatory Administration (Derzhkomatom) said that Russian and Ukrainian delegations refused to continue discussing the issue. It is unclear where and at what level the next round of negotiations will take place. Ukrainian experts believe that failure to reach an agreement may also undermine a preliminary agreement on the joint venture's creation, reached earlier this year. Each country would hold equal shares in the venture. Russian fuel manufacturer TVEL would supply the know-how and raw materials to begin production. Five Ukrainian VVER-1000 reactors would receive fuel from the project. The production plant would be located in Zhovti Vody, Dnipropetrovsk Oblast.

Kommersant-daily, [Online] <http://win.www.online.ru/rproducts/commersant-daily>, 8/14/97. Intelnews (Kiev), 8/8/97; in FBIS-SOV-97-220, 8/8/97.

MIDDLE EAST AND AFRICA

CYPRUS

Missile

The contract for Russia to provide S-300 [NATO designation SA-10 Grumble] surface-to-air missiles (SAMs) to Cyprus stipulates that if destroyed before delivery, they must be replaced by Russia at no cost to Cyprus. The Cyprus National Guard also plans to acquire SAMs of shorter range than the S-300, to protect their delivery from Turkish attack.

Loukis Loukaidhis, *O Agon* (Nicosia), 9/12/97, p. 1; in FBIS-WEU-97-255, 9/12/97.

EGYPT

Missile

U.S. intelligence officials said that Egypt has received substantial assistance in Scud-C missile development from North Korea, in violation of U.S. nonproliferation laws. Egypt reportedly requested North Korean spare parts for guidance and control equipment for its Scud missiles in 5/97. At least seven shipments of material for Scud-C missile production, including special sheet metal and support equipment, were shipped to Egypt from North Korea in 3-4/97. In late 1996, North Korea repaired missile-production equipment that it had previously supplied to Egypt. This included gyroscope measuring and pulse-code modulation equipment. Egypt and North Korea have reportedly had a licensing agreement to produce Scud-C missiles since the 1980s.

Bill Gertz, *Washington Times*, 9/17/97, p. 1 & 10.

IRAN

Nuclear

IAEA Director General Hans Blix arrived in Iran on 7/19/97 to inspect two nuclear research centers. An IAEA source said the agency "will not get involved" in completing Bushehr, saying that "statements by Iran that Busheir (Bushehr) is being finished under IAEA auspices simply aren't true."

The Iran Brief, 8/1/97, p. 2.

IAEA officials said on 7/4/97 that the agency found no sign of any undeclared or clandestine activity at two sites in northern Iran following a 7/97 visit to the sites by IAEA Director General Hans Blix. During meetings with Atomic Energy Organization of Iran (AEOI) and regulatory officials in Tehran, Blix discussed the planned installation of a VVER pressurized water reactor (PWR) at Bushehr. About 30 Iranian technicians are in Russia for training under a Russian-Iranian agreement to complete two reactors at Bushehr.

Mark Hibbs, *Nucleonics Week*, 8/7/97, p. 9.

Ukrainian Foreign Minister Hennady Udovenko said on 8/18/97 that Ukraine is considering a proposal by Turboatom to supply a turbine for a reactor that Russia is build-

ing in Iran. Udovenko said he will study a draft contract under which Turboatom, a Kharkiv-based factory, would supply a 1,000 MW turbine for the reactor in Bushehr.

RFE/RL Newsline Vol. 1, No. 98, Part II, 8/19/97.

According to a 8/25/97 report in the English-language daily *Iran News*, China's Deputy Prime Minister Li Lanping informed Israeli Prime Minister Benjamin Netanyahu that China would not supply Iran with equipment for nuclear reactors.

IRNA (Tehran), 8/25/97; in FBIS-TAC-97-237, 8/25/97.

On 8/26/97, Chinese Foreign Ministry spokesman Tang Guoqiang avoided commenting directly about reports that China would not help Iran build a nuclear reactor. Asked during a news briefing about Chinese reactor sales to Iran, Tang said only that China did not encourage nuclear proliferation. The *Washington Post* reported that U.S. officials have made cancellation of the Iranian reactor deal an informal condition for the approval of U.S. civilian nuclear technology to China.

Reuters, 8/26/97.

Iran may acquire a nuclear research reactor from India on condition that India guarantees that it will "uphold its commitments," according to Iranian National Energy Agency head Husayn Mashayqi. The Indian Atomic Energy Ministry, said Mashayqi, reneged on a proposal to build a research reactor in Iran during the 1980s.

Ha'aretz (Internet version), 9/11/97; in FBIS-NES-97-258, 9/15/97.

The official Iranian news agency IRNA reported on 9/15/97 that China's ambassador in Tehran expressed his country's desire to help build a nuclear power plant in central Iran. Ambassador Shi Ji Wang told Iranian Energy Minister Habibollah Bitaraf that China "was fully determined" to cooperate with Iran in constructing the plant near Arak. Construction of the 1,300 MW power station began in 12/96, with China providing machinery for the plant.

Reuters, 9/15/97.

Russia's ambassador to Iran, Konstantin Sholov, stated that Russia will continue to assist in constructing the Bushehr nuclear power plant and will guarantee its safety. Sholov denied that Russia was involved in weapons transfers to Iran and emphasized that the Bushehr plant is for peaceful uses.

Iranshahr, [Online] <http://www.iranshahr.com>, 9/16/97.

Iranian Foreign Minister Kamal Kharrazi said accusations that his country was developing nuclear weapons were "baseless." In a speech to the U.N. General Assembly, Kharrazi said "The Islamic Republic of Iran, on the basis of Islamic principles, considers weapons of mass destruction inhumane and illegitimate."

Reuters, 9/22/97.

U.S. Vice President Al Gore said on 9/23/97 in Moscow that a joint U.S.-Russian investigation has shown that Iran is aggressively seeking technology to develop nuclear weapons and ballistic missiles. The investigation was conducted by former U.S. Ambassador to India and Egypt Frank G. Wisner, and Director of the Russian Space Agency Yuri Koptev.

Washington Post, [Online] <http://www.washingtonpost.com>, 9/24/97.

A spokesman for the Iranian Foreign Ministry said on 9/24/97 that Iran will not permit U.S. monitoring of a nuclear power plant being constructed with Russian assistance near Bushehr. Mahmoud Mohammadi said the plant would be supervised only by the IAEA and that "Iran absolutely believes no other authority has the competence to monitor the site and will not allow it."

Russia Today, [Online] <http://www.russiatoday.com>, 9/24/97.

Missile

According to U.S. government sources, on 6/18/97 Iran test-launched one of its new Chinese-built C-802 Silkworm anti-ship cruise missiles. In a non-binding resolution, the U.S. Senate called for sanctions against China in response to these sales and to earlier exports in 3/96.

Arms Control Today, 7/97, p. 28.

German intelligence coordinator Berndt Schmidbauer warned in 7/97 that a "quantum leap" in Iran's ballistic missile program has led Germany's Federal Intelligence Service, the BND, to conclude that Iran will have "missiles for nuclear, biological, and chemical weapons with a range of about 2,000 km in the foreseeable future." In an interview with the German news weekly *Der Spiegel*, published on 7/7/97, Schmidbauer said that Iran's new missile technology "is currently being developed and tested. It can be ready for use within five years."

The Iran Brief, 8/1/97.

The Clinton administration has been pressuring Russia to stop its scientists and military institutes from helping Iran develop a new ballistic missile that could reach Israel, senior U.S. officials said. Assistance to Iran is being provided by institutes and companies that were part of the state-owned military complex of the Soviet Union.

Steven Erlanger, *New York Times*, 8/22/97, p. 1.

In 7/97, Israeli newspaper *Ma'ariv* reported that Iran was in the final stage of developing a missile with a range of 1,100 km (700 miles), and had started research to develop a missile with a range of 2,000 km (1,250 miles).

Washington Times, 8/25/97, p. 3.

U.S. Department of Defense (DOD) officials said they had received an Israeli intelligence report that Iran is developing long-range ballistic missiles that could be deployed within three years. The report said that Iran is building two systems based on the North Korean Nodong missile, which has a maximum range of 1,900 km (1,200 miles). DOD officials said that Iran's missile program receives testing technology from the Chinese company Great Wall Industries and extensive technological assistance from Russian industry. The DOD officials believe the two Iranian missiles under development are designated Shahab-3 and Shahab-4. The officials said the Shahab-3 would have a range between 1,300 km and 1,500 km (800-930 miles) and be capable of carrying a 750 kg (1,650 lb) payload, while the Shahab-4 would feature an improved guidance pack-

age, a 2,000 km (1,240 mile) range, and a 1,000 kg (2,200 lb) payload. These capabilities would enable the Shahab-4 to strike targets as far away as Germany and western China. The missiles will be made in Iran.

Bill Gertz, *Washington Times*, 9/10/97, p. 1.

An anonymous Russian special service official said that China and North Korea are currently the primary suppliers to the Iranian missile program. Israeli military equipment was reportedly sold to Iran until 1993, with the approval of the Israeli Ministry of Defense.

Ben Kaspi, *Ma'ariv* (Tel Aviv), 9/12/97, p. 2; in FBIS-TAC-97-255, 9/12/97. *Interfax* (Moscow), 9/11/97; in FBIS-TAC-97-254, 9/11/97.

Results of an investigation by Germany's BND found that there are three Iranian agencies involved in procuring material for military programs: the Defense Industries Organization (DIO), the end user for dual-use technology and material; *Bonyad Mostafazan ve Janbazah*, a state holding company; and the State Purchasing Organization, which is "almost exclusively responsible for buying military hardware, such as tanks and ammunition." BND investigators are trying to determine if subsidiaries of the Krupp corporation or Siemens are involved in any illegal transactions. Judicial proceedings are already under way regarding such companies as *Hoffman Mess und Regeltechnik* (measuring and control engineering) of Swabia for allegedly supplying test devices used for tuning gyro-compasses and missile guidance components. A BND report describes the use of "fake companies" to procure equipment for weapons programs. Iran frequently places these fronts in third countries between supplier and recipient so that German firms do not know they are actually delivering goods to Iran. Dubai and Pakistan are among the countries used for these roundabout deals.

Stern (Hamburg), 9/11/97, pp. 182-184; in FBIS-TAC-97-254, 9/11/97.

Information from U.S. intelligence agencies links several Russian entities to the Shahid Hemmat Industrial Group (SHIG), Iran's defense industrial agency in charge of ballistic missile development and production.

Among those entities are: the Russian arms-exporting agency Rosvoorouzhnie; the Bauman Institute, a research center; NPO Trud, a rocket engine manufacturer; Polyus, a laser manufacturer; and the Russian Central Aerohydrodynamic Institute, which helped build a wind tunnel; and a scientific and production center called Inor.

Bill Gertz, *Washington Times*, 9/13/97, p. A5.

The United States has evidence that Russia passed working material and information about the R-12 (NATO designation SS-4 Sandel) surface-to-surface missile to Iran. Referring to Israeli information confirmed by U.S. intelligence, an unnamed source in the Clinton administration said that Russia has transmitted to Iran the technology for manufacturing the 2,000 km-range missile. An Israeli source said the R-12 will be the basis for developing the Shahab-4 (Falling Star-4) missile.

Eksport obychnykh vooruzheniy (Moscow), No. 1-2 (9-10), 1997, pp. 11-15; in FBIS-SOV-97-190, 10/1/97. Steve Rodan, *The Jerusalem Post*, 10/1/97, pp. 1, 19; in FBIS-TAC-97-274, 10/1/97.

IRAQ

Nuclear

Iraq announced on 8/14/97 it had cooperated with the United Nations in disarming itself under the terms of the 1990-91 Gulf War cease-fire, and called on other Middle East states to declare openly their weapons of mass destruction (WMD). Iraqi spokesman Barzan Ibrahim Al-Tikriti said Iraq was "transparent" about implementing U.N. Security Council resolutions on WMD, presenting periodic statements on activities relating to such weapons.

Stephanie Nebehay, *Reuter*, 8/14/97. Infobeat, [Online] <http://www.infobeat.com>, 8/14/97.

According to a U.S. Office of Naval Intelligence's (ONI) report on worldwide maritime challenges, China has been shipping critical military technology and materials to Iran and Iraq to be used in their nuclear, chemical, and biological weapons programs.

Bill Gertz, *Washington Times*, [Online] <http://www.washtimes.com>, 9/2/97.

ISRAEL

Missile

Senior Israeli officials reject U.S. charges that Israel transferred radar, fighter aircraft, and cruise missile technologies to China. They said Israel provided information to U.S. officials to demonstrate that all weapons and technologies sold to China during the past two decades were Israeli products, and hence did not require U.S. third-country export licenses. They stated, moreover, that an internal Israeli Ministry of Defense review of defense contracts since 1979 could not identify a single case in which missile guidance, navigation, or seeker technologies were transferred to China. U.S. officials remain concerned that prototypes of Israel's aborted Lavi fighter program may have been transferred to China. Senior Israeli officials asked their U.S. counterparts to remove the contentious issue from the bilateral agenda.

Barbara Opall, *Defense News*, 7/21/97-7/27/97, p. 2.

Deployment of Israel's Arrow-2 anti-missile system in late 1998 or early 1999 will not be delayed, despite a test launch failure on 8/21/97. Program Director Uzi Rubin said the failure was beneficial because it helped "find malfunctions and ascertain that shortcomings have been overcome." Officials refused to identify the cause of the failure, stating that it would remain classified to avoid revealing the program's weaknesses. Twenty-five Israeli firms are participating in the \$1.6 billion Arrow program, in which \$490 million has already been invested. The Arrow has come under increasing criticism in the Israeli press. Commentators said that the system will destabilize the "balance of terror" in the region; will be less effective than alternative approaches; that official cost estimates, deployment schedule, and program effectiveness are part of a "disinformation campaign"; and that the Israeli academic community, press, and Knesset Foreign Relations and Defense Committees have failed to debate the relative merits of Arrow and alternative ballistic missile defense systems and have allowed the program to continue unsupervised.

Steve Rodan, *Jerusalem Post*, [Online] <http://www.jpost.co.il>, 8/28/97. Dror Merom, *Globes Arena*, [Online] <http://www.globes.co.il>, 8/28/97.

Dror Merom, *Globes Arena*, [Online] <http://www.globes.co.il>, 8/21/97. *Ha'aretz* (Tel Aviv), 9/18/97; in FBIS-TAC-97-261, 9/18/97. Jeff Erlich & Steve Rodan, *Defense News*, 8/21/97-8/31/97, p. 3. Re'even Pedatzur, *Ha'aretz* (Tel Aviv), 8/21/97, p. B1; in FBIS-NEW-97-233, 8/21/97. Oded Lifschitz, *Globes Arena*, [Online] <http://www.globes.co.il>, 9/3/97. Re'even Pedatzur, *Ha'aretz* (Tel Aviv), 8/25/97; in FBIS-TAC-97-237, 8/25/97.

Israeli Prime Minister Benjamin Netanyahu ordered a halt to all joint Israeli-Russian economic projects following reports of Russian government involvement in Iranian ballistic missile development. However, the order does not apply to growing Israeli defense exports to Russia, including the program to convert an Il-76 cargo jet into an airborne early warning (AEW) platform for export to China. The Israeli-Russian AEW contract is estimated to be worth \$1 billion.

Ben Kaspi, *Ma'ariv* (Tel Aviv), 9/12/97, p. 2; in FBIS-TAC-97-255, 9/12/97. *Defense News*, 9/22/97-9/28/97, pp. 3, 60. *Defense News*, 10/6/97-10/12/97, p. 19.

Czech news media reported that a conventionally armed OTR-21 (NATO designation SS-21 Scarab) warhead from a Czech army was clandestinely exported to Israel "some-time in the middle of last year (1996)." One source reported that the warhead was moved in the first "half of this year (1997)." According to an anonymous source, the warhead was loaned to Israel and then returned "a few weeks later" without proper notification of military authorities. Israel imported the warhead secretly, dismantled it, and then re-assembled it, the source said. Israeli military organizations and three heads of Czech military secret services reportedly agreed to the transfer. A different unnamed source from the Czech defense department did not discount such a possibility and said that Israel is a frequent target of OTR-21 attacks. Czech state attorney from Prague's sixth district, Jindra Janacova, said she will investigate the anonymous allegations. If the warhead was transported without an intergovernmental agreement, district authorities could charge those involved with espionage and abuse of authority.

Pravo (Prague), 9/13/97, pp. 1, 2; in FBIS-EEU-97-258, 9/15/97. *CTK* (Prague), 9/17/97; in FBIS-TAC-97-260, 9/17/97. Prague Radiozurnal Radio Network, 9/14/97; in FBIS-EEU-97-258, 9/15/97.

LIBYA

Nuclear

Russia announced that it will begin negotiating with Libya to rebuild the Tajura Nuclear Research Center, and it would no longer abide by U.N. sanctions imposed against Libya for the 1992 bombing of a U.S. commercial airliner. Russian officials called the sanctions "unjust" and said that they restrict Russian-Libyan cooperation. The Russian Ministry of Foreign Economic Relations estimates that Russian compliance with the sanctions has cost the country \$7 billion to date. Russian Foreign Ministry spokesman Gennady Tarasov said the Libyans have appropriate safeguards agreements with the IAEA to put the reactor at Tajura under international control.

Gennadiy Charodeyev, *Izvestia*, [Online] <http://win.win.online.ru/rproducts/izvestia-izvestia-year/>, 10/24/97. *Russia Today*, [Online] <http://www.russiatoday.com/rtoday>, 10/24/97.

Missile

Italian police confiscated a large and sophisticated machine lathe en route to Libya which would have enabled Libya to increase the range of its ballistic missiles. The lathe is used to shape large metal cylinders such as oil drills, but can also be used to form missiles and is therefore subject to export controls. The Genoa State Police General Investigations and Special Operations Division (DIGOS) kept the lathe under surveillance for months before seizing it in 5/97. Police have charged seven Italian citizens for attempting the illegal export.

Stefano Scondino, *Il Giornale* (Milan), 8/10/97, p. 10; in FBIS-TAC-97-223, 8/11/97.

Swiss and Australian authorities banned entry of German space technology scientist Lutz Kayser into their countries on suspicion that he is seeking to acquire material and machines for use in the Libyan missile program.

Munich Focus, 9/2/97, pp. 106-7; in FBIS-TAC-97-245, 9/2/97.

SOUTH AFRICA

Nuclear

South Africa's draft Nuclear Energy Act may reduce the staff of the Atomic Energy Cor-

poration (AEC), whose personnel have been cut dramatically over the last seven years, falling from 8,000 to 2,000. AEC executive G.M. Mojalefa Murphy said "We have already lost hundreds of experienced scientists and engineers to overseas research institutions, and the draft act would be the final nail in our coffin." Due to termination of AEC's fuel fabrication activities in 1996, Murphy said that less than 30 internationally competent scientists and engineers remain in the country. Job losses by nuclear scientists, technicians, and engineers have taken place in the context of a more generalized "brain drain" from South Africa. A net exodus of skilled professionals has been under way since 1994.

Mariana Bidoli, *Financial Mail*, [Online] <http://www.fm.co>, 8/15/97. Clive Sawyer, *Independent Online*, [Online] <http://www2.inc.co.za>, 4/16/97. *Independent Online*, [Online] <http://www2.inc.co.za>, 6/13/97.

Police confiscated three bottles containing 250 g of uranium oxide from Terrence Cooke in 7/97, who attempted to sell them in southern Johannesburg for R2 million. Charges were dropped in 11/97, because the state was not prepared to present its case after hearings were postponed several times for further investigation.

Independent Online, [Online] <http://www.inc.co.za/online>, 11/7/97. *Independent Online*, [Online] <http://www.inc.co.za/online>, 7/97.

U.S. nuclear experts called for the re-examination and declassification of U.S. evidence regarding a 9/79 event off the coast of southern Africa which may have been a nuclear weapon test. South African Deputy Foreign Minister Aziz Pahad's press secretary told *Albuquerque Journal* reporters on 7/11/97 that a 4/97 report that he had said the event was "definitely a nuclear test" had been taken out of context. Pahad's representative said there was only a "strong rumor" that the event, detected by a U.S. Vela satellite, was a nuclear test. The U.S. Institute for Science and International Security (ISIS) noted that the IAEA concluded that South Africa did not possess a sufficient supply of highly enriched uranium to build a nuclear explosive in 1979. Los Alamos National Laboratory (LANL) issued a press release on 7/11/97 citing the original report of Pahad's state-

ment, asserting that it confirmed its evaluation that the event was a nuclear test. LANL seeks to place a new generation of sensors on U.S. satellites to detect electromagnetic pulses emanating from nuclear explosions.

David Albright & Corey Gay, *Bulletin of the Atomic Scientists*, [Online] <http://bullatomsic.org>, 10/97-11/97. Institute for Science and International Security, [Online] <http://www.fas.org/spp/starwars>, 8/4/97. William B. Scott, *Aviation Week & Space Technology*, 7/21/97, p. 33.

Two people were arrested and 10 kg of uranium oxide, valued at R300,000, was seized in a raid by a police organized crime unit in Cape Town, South Africa, on 9/9/97.

Sapa, 9/12/97.

Missile

British Aerospace and the South African company Kentron (a subsidiary of the state firm Denel) are negotiating to develop and produce military missiles and rockets for export. British Aerospace seeks joint ventures to furnish products manufactured in South Africa to the United Kingdom and other countries, as well as to invest directly in the South African military industry.

Jonathan Rosenthal, *Independent Online*, [Online] <http://www2.inc.co.za>, 7/31/96.

South African Defense Minister Joe Modise and U.S. Secretary of Defense William Cohen signed an accord in 8/97 to establish a high-level defense committee. However, the ban on U.S. arms sales to South Africa will not be lifted until the U.S. State Department is satisfied that South Africa has developed adequate arms-control compliance manuals for two firms: Kentron and Fuchs Electronics. South Africa agreed to develop the manuals to ensure that U.S. technology is not transferred to unauthorized third countries. Lawyers from both countries said it may take up to a year to finalize the compliance program document.

Jeff Erlich, *Defense News*, 8/4/97-8/10/97. *Independent Online*, [Online] <http://www.inc.co.za>, 8/97.

Houwteq, the aerospace division of South Africa's Denel group, will sign a joint venture with an unspecified international satellite group to test and launch satellites from its Overberg facility in the Western Cape. The partnership is expected to create between

100 and 200 high-tech aerospace jobs and earn South Africa over R500 million annually, according to Houwteq divisional manager Ian Farr. Denel Aerospace Strategy Director Kobus Eksteen said that senior South African scientists had been asked by an unnamed Asian country to assist in developing its aerospace capacity.

Willem Steenkamp, *Independent Online*, [Online] <http://www.inc.co.za>, 8/20/97.

TURKEY

Missile

Four ships suspected of carrying S-300 [NATO designation SA-10 Grumble] surface-to-air missile parts were stopped and searched by Turkish Coast Guard officials as they entered the Bosphorus. Turkish authorities warned that "ships carrying missiles to hostile countries will be regarded as a cause of war" and that Turkey is determined to "attack" such vessels. Russian Ambassador to Cyprus Georgiy Muratov said on 10/9/97 that an attack by Turkey on a ship carrying the S-300 missiles from Russia to Cyprus would be grounds for war. Greek Deputy National Defense Minister Dhimitrios Apostolakis said that if ships transporting Russian S-300 missiles to Cyprus were being attacked by Turkey, Greece would certainly react.

Yeni Yuzylil (Ankara), 9/4/97, p. 6; in FBIS-WEU-97-247, 9/4/97. Cyprus Broadcasting Corporation Radio Network (Nicosia), 10/10/97; in FBIS-WEU-97-283, 10/10/97. Olga Tremi, *Eleftheros Tipos* (Athens), 10/20/97, pp. 6-7; in FBIS-WEU-97-295, 10/22/97.

Turkey reportedly initiated a program to acquire Chinese equipment and know-how in order to build short- and medium-range surface-to-surface missiles. Senior Turkish officials declined to comment on the report.

Umit Enginsoy & Brooks Tigner, *Defense News*, 9/15/97-9/21/97, pp. 1, 48.

The U.S. Department of Defense (DOD) announced on 10/9/97 the sale of 138 AIM-120 Advanced Medium Range Air-to-Air Missiles (AMRAAM), and 120 ALU-129A/A launchers to Turkey for \$62 million. Principle contractors are Hughes Aircraft and Raytheon. The DOD said the sale would not adversely affect the military balance in the

region or U.S. efforts to resolve the Cyprus dispute between Turkey and Greece.

DefenseLINK News, [Online] <http://www.defenselink.mil>, 10/9/97, No. 180-M.

Turkey will buy 70 Popeye air-to-air missiles from Israel. The 100 km-range missiles will be mounted on Turkey's F-4 fighter aircraft, which are being modernized by Israel.

Lale Sariibrahimoglu, *Istanbul Cumhuriyet* (Ankara), 10/14/97; p. 9, in FBIS-WEU-97-289, 10/16/97.

Turkey and Israel agreed to co-produce long-range Delilah unmanned aerial vehicles (UAVS), during a meeting of Israel Defense Forces Chief of General Staff Lt. Gen. Amnon Lipkin Shahak with senior Turkish officials in Ankara on 10/13/97. A formal accord on production of the 500 km-range Delilah — which can be re-engineered as a cruise missile — is expected by the end of 1997.

Metehan Demir, *Turkish Daily News*, [Online] <http://www.TurkishDailyNews.com/>, 10/14/97.

LATIN AMERICA

ORGANIZATION OF AMERICAN STATES

Missile

The General Assembly of the Organization of American States (OAS) is developing a legal framework to require advance notice of acquisitions of missiles, combat aircraft, and five other categories of major weapons systems covered by the U.N. Register of Conventional Arms. The framework will be considered at the next Summit of the Americas, to be held in Santiago, Chile, in 4/98. The proposal aims to foster transparency in ongoing Latin American defense modernization, and thereby limit unnecessary weapons acquisitions.

U.S. Arms Control and Disarmament Agency Fact Sheet, 7/8/97.

ARGENTINA

Nuclear

Argentine and Brazilian nuclear industry representatives met in Brasilia in 7/97 to discuss joint ventures in reactor production, radio-isotopes and radio-pharmaceuticals, food irradiation, and power plant construction. Argentine representatives proposed that the Brazilian energy firm Furnas bid on the three Argentine reactors to be privatized in 1998, and that Argentine firms receive contracts to finish construction of the Brazilian nuclear power plant Angra-2 and to construct Angra-3. These efforts would be followed by joint development of a small reactor, dubbed the "Mercosur," for export to other Latin American countries.

Monica Yanakiev, *Gazeta Mercantil* (Sao Paulo), 7/10/97, p. A6; in FBIS-LAT-97-195, 7/14/97.

Argentina and Greece signed a bilateral accord to promote cooperation in basic and applied research on nuclear energy development.

Athens News Agency, 7/18/97; in FBIS-WEU-97-199, 7/18/97.

BRAZIL

Missile

Brazil and France are negotiating joint development of a space launch vehicle larger than the Brazilian VLS and smaller than the European Ariane. The proposed rocket would lift payloads between 500 kg and 1,000 kg into a 2,000 km orbit. The negotiations reflect informal agreement that direct commercial competition between the two systems is not in the interest of either country. Brazil's Alcantara launch site in Maranhao, and France's Guyana Space Center located in French Guyana, are similarly situated near the equator and could compete against each other in the satellite launch market.

Peter B. de Selding, *Space News*, 7/7-13/97, p. 3, 20.

French aeronautics firms are negotiating the sale of Exocet missiles and Mirage 2000 and Rafale fighter aircraft to Brazil. Brazilian Navy officials have reportedly made several trips to discuss French nuclear submarine

technology. Facing domestic defense cuts, French firms are reportedly willing to ease access to advanced technologies to counter increasing competition from the United States. On 9/1/97 the Clinton Administration lifted the U.S. ban on sales of advanced conventional weapons to Latin America, ending a policy instituted two decades earlier. Officials said the United States would consider sales on a "case by case" basis, and would not approve sales to countries with ongoing conflicts.

Reali Junior, *Estado de Sao Paulo*, [Online] <http://www.estado.com.br>, 8/7/97. *New York Times*, 8/2/97, p. 1.

CHILE

Missile

The Rayo rocket artillery system debuted in a military parade on 9/19/97 in Chile. The Rayo is developed jointly by Chilean Army Ordnance and the British firm Royal Ordnance and will be marketed by the latter firm in 1998. The system consists of 24 Rayo launchers fitted with 160 mm-caliber rockets; maximum range is 45 km. The system is mounted on a German-made MAN SX2000 6 x 6 truck. Vehicle trials are expected in 10/97, firing tests in 11/97, and system qualification trials in early 1998. The first Rayo rockets will be equipped with a warhead based on the Royal Ordnance 155 mm L15 HE projectile and use an electronic fuse provided by the South African firm Fuchs. Royal Ordnance will provide key subsystems, including the strip laminate rocket motor case, but the Rayo will be produced at FAMA facilities near Santiago.

Juan Araya, *El Mercurio* (Santiago), 9/14/97, pp. D1, D8, D9; in FBIS-LAT-97-266, 9/23/97. *Jane's Defence Weekly*, 8/20/97, p. 8. *El Mercurio* (Santiago), 9/3/97, p. C-5; in FBIS-LAT-97-258, 9/15/97.

ECUADOR

Missile

Israel will sell 100 Python-3 air-to-air missiles worth \$10 million to Ecuador. They will be deployed on Kfir attack aircraft which Israel sold to Ecuador in 1996. However, Israel reportedly will not sell Ecuador the state-of-the-art Python-4 missile.

Amnon Barzilay, *Ha'aretz* (Tel Aviv), 8/10/97, p. A4; in FBIS-TAC-976-222, 8/10/97.