

BALLISTIC, CRUISE MISSILE, AND MISSILE DEFENSE SYSTEMS: TRADE AND SIGNIFICANT DEVELOPMENTS, MARCH 1995-JUNE 1995

ARGENTINA

INTERNAL DEVELOPMENTS

5/95

Argentine Foreign Minister Guido Di Tella says that suspension of the Condor missile project and the accession of his country to the MTCR, together with other arms control policies, elevates Argentina to an exemplary position in the international community.

Susana Merlo, *Ambito Financiero* (Buenos Aires), 5/17/95, p. 16; in FBIS-LAT-95-098, 5/17/95 (5006).

The numbers listed in parentheses following the bibliographic references refer to the identification number of the document in the International Missile Proliferation Project Database, from which the news summaries are abstracted. Because of the rapidly changing nature of the subject matter, The Nonproliferation Review is unable to guarantee that the information reported herein is complete or accurate, and disclaims liability to any party for any loss or damage caused by errors or omissions.

AUSTRALIA

INTERNAL DEVELOPMENTS

5/26/95

Australia launches its first liquid-fueled rocket, the Asroc-2 Mark 2, from an inclined rail at Woomera Rocket Range. A malfunction in the helium pressure regulator of the liquid oxygen tank reduces the rocket's range, speed, and altitude by half.

Peter Shann Ford, *Space News*, 6/5/95-6/11/95, p. 27 (5110).

AUSTRALIA WITH FRANCE AND UNITED STATES

3/95

Australia announces its intention to make a final decision, before the end of 1995, on whether to equip the RAAF's F-111C/Gs, and possibly F-18s, with Rafael's Popeye or Rockwell's AGM-130 air-to-surface missile. Deliveries of the missiles could then commence by FY 1996-97.

Flight International, 3/29/95-4/4/95, p. 9 (5087).

AUSTRALIA WITH INDIA

5/21/95

Australian Foreign Minister Gareth Evans tells a news conference that India's deployment of Prithvi missiles is a destabilizing factor in the region. Evans also says that India's missile programs are a threat because they can trigger reciprocal arms build-ups by other countries in the region.

Radio Pakistan Network (Islamabad), 5/21/95; in FBIS-NES-95-099, 5/21/95 (5208).

AUSTRALIA WITH ISRAEL

4/23/95

Australian Defense Minister Robert Ray visits Israel and discusses possible purchase of the Israeli Aircraft Industries/Rafael Barak-1 point-defense missile systems for the Australian Navy's FFG-7 frigates.

Flight International, 4/26/95-5/2/95, p. 14 (5088).

AUSTRALIA WITH RUSSIA

4/95

The Russian enterprise STC Complex and the Australian Space Office initiate a study into the feasibility of launching Russia's Start SLV from Australia, taking into account Moscow's MTCR obligations. The study is expected to be complete by the third quarter of 1995. Russia could then begin ship-

ping rockets to Australia in 1997.

Warren Ferster, *Defense News*, 4/24/95-4/30/95, p. 29 (4982). Warren Ferster, *Space News*, 4/24/95-4/30/95, p. 24 (5062).

AUSTRALIA WITH UNITED STATES

5/95

Australian officials say plans to develop software as part of a cooperative ground-based theater missile defense research project with the U.S. will not violate the ABM Treaty and do not reflect a change in Australia's opposition to "Star Wars" research. The software will be designed to locate and destroy incoming missiles.

Graeme Dobell, *Radio Australia* (Melbourne), 5/19/95 (5082).

AZERBAIJAN

AZERBAIJAN WITH IRAN

6/95

Azerbaijan sells six Kub air defense missile launchers to Iran. Due to their poor condition, Iran is forced to cannibalize them to make three serviceable launchers.

Aleksandr Sychev, *Izvestiya* (Moscow), 6/6/95, p. 3; in JPRS-UMA-95-025, 6/6/95 (5104).

BAHRAIN

BAHRAIN WITH UNITED STATES

1/95

The U.S. agrees to sell Bahrain a Hawk air defense battery.

Philip Finnegan, *Defense News*, 4/17/95, pp. 1, 45 (5048).

4/95

Bahrain seeks the U.S. Army Tactical Missile System for its existing MLRS but, according to a Pentagon official, the U.S. is restricted from transferring this system under the MTCR.

Philip Finnegan, *Defense News*, 4/17/95, pp. 1, 45 (5048).

BELARUS

INTERNAL DEVELOPMENTS

12/27/94

Belarusian President Alyaksandr Lukashenka says that every country of the former USSR has the right to sell its share of military technology developed while part of the Union. Lukashenka confirms that Belarus has sold S-300 missile system components, but claims that no one intends to sell a complete system.

Zenon Starchenko, *Khreshchatyk* (Kiev), 1/20/95, p. 2; in JPRS-TAC-95-001, 2/14/95, pp. 50-51 (5065).

BELARUS WITH RUSSIA

5/26/95

The head of Russia's Strategic Missile Troops, Staff Colonel-General Viktor Yesin, says 18 ICBMs remaining in Belarus will be transferred to Russia by the end of 1995. Yesin states that Russia maintains operational control over the missiles.

Doug Clarke, *Omri Daily Digest*, 5/29/95 (5041). Interfax (Moscow), 5/26/95; in FBIS-SOV-95-103, 5/26/95 (5117).

BELARUS WITH UNITED STATES

1/95

U.S. Deputy Assistant Secretary of Defense Gloria Duffy meets with Belarus government officials to discuss disarmament, defense conversion, and housing needs for

personnel demobilized from the Belarusian strategic missile forces. Duffy assures Belarus that Congress will continue to support U.S. financing for disarmament. The U.S. plans to give Belarus \$6 million for the destruction of approximately 15,000 tons of rocket fuel left behind by Russian troops.

Belapan (Minsk), 1/25/95; in JPRS-TAC-95-001, 2/14/95, p. 48 (5024).

5/95

Belarus' First Deputy Foreign Minister Valeriy Tsepka says that the U.S. has granted Belarus an additional \$6 million for the destruction of dismantled missile launch facilities at Krona. There were 81 such launch sites in Belarus following the breakup of the former Soviet Union.

Interfax (Moscow), 5/18/95; in FBIS-SOV-95-097, 5/18/95 (5137).

6/23/95

The U.S. agrees to give Belarus \$19 million to "monitor the physical protection of nuclear materials in Sosny, to destroy liquid rocket fuel and missile launching pads, and also to destroy the nuclear infrastructure."

Valentin Menshikov, *Itar-Tass* (Moscow), 6/23/95; in FBIS-SOV-95-122, 6/23/95 (5123).

BOSNIA

INTERNAL DEVELOPMENTS

5/95

Photographs taken of "improvised weapons" deployed by Bosnian Serb forces in the Majevisa mountain region show a 127 mm air-to-surface rocket launcher, which may have come from a MiG-21, and an AA-2B ('Atoll') AAM on an improvised mount. [The weapons have been modified for a surface-to-surface role.]

Jane's Defence Weekly, 5/13/95, p. 12 (5103).

6/95

Press reports indicate that the improvised rocket system which the Bosnian Serbs used

to attack Bihac in the spring of 1995 may have employed 'Saggar' anti-tank missile components in order to control the simultaneous ignition and cut-off of its four 122/128 mm rockets. The weapon has a 10 km range and is launched from a truck mounted rail. This improvised design allows Bosnian Serb forces to deliver heavy ordnance, including fuel-air bombs, without aircraft.

Jane's Intelligence Review Pointer, 6/95, p. 6 (5100).

6/28/95

The Republic of Serb Krajina displays the indigenously-designed and produced K-15 'Krajina' missile. The K-15 has a 150 km range.

Tanjung (Belgrade), 6/28/95; in FBIS-EEU-95-125, 6/28/95 (5081).

BRAZIL

INTERNAL DEVELOPMENTS

3/95

The Brazilian Ministry of Aeronautics will open the Alcantara Launch Center (CLA) to commercial launches, enabling Brazil to compete in the international satellite launch market.

Joaquim Monteiro, *Correio Braziliense* (Brasilia), 3/12/95, p. 20; in FBIS-SOV-95-075, 3/12/95 (4990).

5/95

Brazil is constructing a new Inhaum class light frigate, the Barroso, which will be equipped with MM-40 Exocet surface-to-surface missiles.

Joris Janssen Lok, *Jane's Defence Weekly*, 5/13/95, p. 25 (5005).

6/2/95

Brazil has a potential nuclear delivery arsenal which includes land-based Sonda rockets, as well as tactical warheads mounted on ground-based SS-300 missiles and on Barracuda sea-launched missiles. An ICBM with a range of over 3,000 km could also be built by converting the Veiculo Lancador

de Satelites (VLS) SLV, which is still under development by the Instituto de Aeronautica e Espaco. The three-stage, solid-fuel VLS is based on the Sonda 4 sounding rocket and stands 19 m high with four strap-on motors. The VLS is capable of placing a 200 kg payload into a 750 km, 25-degree orbit, or a 500 km sun-synchronous orbit. The VLS is scheduled for its first launch in 6/96. Although its development has been slowed by MTCR restrictions, Brazil is said to have obtained advanced technology, including micro-electronics, from Russia and elsewhere via the black market. Construction of a nuclear submarine in Rio de Janeiro will be completed in 2000. The total number of Brazilian vehicles capable of carrying nuclear warheads may rise to several hundred in the future, possibly to include several cruise missiles.

Nilolay Kuchin, *Novoye Vremya* (Moscow), 5/95; in FBIS-LAT-95-106, 6/2/95 (5017). Tim Furniss, *Flight International*, 6/21/95-6/27/95, p. 50 (5235).

6/8/95

Brazilian Space Agency President Gylvan Meira Filho says Brazil is preparing to improve existing export control mechanisms for sensitive technologies. The improvements are intended to prevent the proliferation of weapons of mass destruction and their delivery systems. The Brazilian government will send Congress a bill designed to improve export control laws for the transfer of sensitive dual-use technology in the expectation that stricter regulations will facilitate the importation of components for its space program and preempt U.S. sanctions in response to Brazil's acquisition of Russian missile technology.

Virginia Silveira, *Gazeta Mercantil*(Sao Paulo), 6/9/95, p. a7; in FBIS-LAT-95-124, 6/28/95 (5250).

BRAZIL WITH ITALY

3/95

Italy's Alenia Sistemi Navali wins a \$160 million contract from Brazil to equip six Niteroi navy frigates with six Albatros-Aspide SAM systems.

Andrew Hill, *Financial Times*, 3/14/95, p. 9 (4964).

BRAZIL WITH RUSSIA AND UNITED STATES

5/95

The Clinton administration determines that Russia recently transferred advanced missile technology to Brazil but indicates in a secret memo to Congress that it will waive sanctions. According to a Clinton administration official, the decision to waive sanctions over the sale of carbon fiber, which is used in building rocket motor cases, comes after a Russian promise to stop sales to Brazil. A Brazilian official says that Brazil's 2/94 [as published] promise to adhere to MTCR guidelines applies only to the sale and not to the purchase of missile technology. U.S. officials say the decision to waive sanctions is part of an effort to encourage Brazil to become a full MTCR member. Other U.S. officials are quoted as saying the waiver could trigger instability in South America, prompting Argentina to renew its Condor program. A Washington-based non-proliferation expert says the lack of commercial demand for Argentine and Brazilian space launch vehicles may lead to an increased risk of the technology being transferred to ballistic missile programs.

R. Jeffrey Smith, *Washington Post*, 6/8/95, pp. A23, A27 (5146). Warren Ferster, *Space News*, 6/12/95-6/18/95, p. 12 (5234).

BRAZIL WITH UNITED KINGDOM

3/95

The U.K. will sell four Broadsword-class frigates, armed with Seawolf missiles, to Brazil. Deliveries are scheduled for between 6/95 and 4/97.

For Your Eyes Only, 3/20/95 (5055).

BRAZIL WITH UNITED STATES

2/95

The head of Brazil's Strategic Affairs Secretariat Ambassador Ronaldo Sardemberg has informed U.S. Ambassador Melvin Levitsky of Brazil's intention to join the MTCR. Brazil began to express interest in joining the MTCR in early 1994 and established norms for national export controls in

12/94.

Leandro Fortes, *Jornal Do Brasil* (Rio de Janeiro), 2/7/95, p.4, in JPRS-TAC-95-001, 2/14/95, p.6

4/20/95

In an interview, Director of the Brazilian Space Agency Ajax Barros de Melo says that Brazil's commitment to join the MTCR, possibly by 10/95, should strengthen its relationship with the U.S. In particular, de Melo notes the significance of an anticipated memorandum of understanding with the U.S. to facilitate future cooperation on space projects. Brazil's space efforts are focused on the VLS satellite launcher and development of the Alcantara launch site for commercial launch purposes. Brazil expects that full MTCR membership will allow it to acquire advanced technology which will then enable it to meet the scheduled 4/96 launch date for the new expendable launch vehicle. The Brazilian booster is a four-stage rocket capable of placing a 150-kg payload into orbit. Total funding for Brazil's space research and development program, including university and environmental projects, is \$150 million, twice the figure allotted for 1994. From 1980 to 1995, Brazil invested approximately \$300 million in its space launch infrastructure.

Patrick Seitz, *Space News*, 4/24/95-4/30/95, pp. 3, 29 (5144). *Defense News*, 4/24/95-4/30/95, p. 6 (5145).

BULGARIA

BULGARIA WITH RUSSIA AND UKRAINE

6/95

The Bulgarian Ministry of Defense buys ST-68 radars from Ukraine after being told, incorrectly, that they were compatible with Bulgaria's new Russian S-300 PMU air defense missile system. When the radars fail to work with the missile systems, Bulgaria is forced to replace them with alternative models from Russia.

Aleksandr Sychev, *Izvestiya* (Moscow), 6/6/95, p. 3; in JPRS-UMA-95-025, 6/6/95 (5104).

CROATIA

INTERNAL DEVELOPMENTS

5/95

Croatia has acquired 400 km-range Pershing missiles from unnamed Islamic countries and S-300 SAMs for medium and high altitude defense from Russia. Croatia is reportedly seeking to obtain 700 km-range SSMs.

Zoran Lukic and Nik Kotej, *Telegraf* (Belgrade), 5/24/95, pp. 41-43; in FBIS-EEU-95-106, 5/24/95 (5068).

5/95

During a national day parade, the Croatian army exhibits S-300 (SA-10 'Grumble') SAMs, Swedish RBS15 anti-ship missiles, and an adapted SA-2 'Guideline' SAM with additional rocket boosters. Since no radar or support equipment are displayed, it is not known if the S-300 is fully operational. Possession of the S-300, which appears to be a SA-10a 'Grumble' Mod O static system, is a violation of the UN arms embargo. Also displayed is the self-propelled Strela-10-CRO system which, according to the Croatian Deputy Defense Minister Major-General Vladimir Zagorec, was developed entirely in Croatia.

Jane's Intelligence Review Pointer, 7/95, p. 4 (5066). Fran Visnar, *Vjesnik* (Zagreb), 6/3/95, p. 5; in FBIS-EEU-95-111, 6/3/95 (5074).

EGYPT

EGYPT WITH IRAQ AND SUDAN

4/95

In early 1/91 the Sudanese government reportedly received missile systems from Iraq and targeted them against sites in Egypt,

including the Aswan High Dam. Sudan was allied with Iraq during the Gulf War of 1991.

Aleksandr Ivanov, *Nezavisimaya Gazeta* (Moscow), 4/18/95, p. 2; in FBIS-SOV-95-079, 4/18/95 (5205).

EGYPT WITH UKRAINE

6/95

Ukraine's Security Service Administration (SBU) says that a Russian citizen Valeriy Baytter has been arrested for attempting to steal classified information on the technical specifications of missiles from the Pivdenmash facility in Dnepropetrovsk. In 1994, Baytter apparently sent an assistant to Pivdenmash to do the same thing, but he was also apprehended. Baytter says he was contracted by an Egyptian "entrepreneur," although the SBU believes the Egyptian is in the service of an Arab intelligence agency.

Volodymyr Zemlyanyy, *Uryadovyy Kuryer* (Kiev), 6/20/95, p. 12; in FBIS-SOV-95-120, 6/20/95 (5169).

EGYPT WITH UNITED NATIONS

6/95

UNSCOM Head Rolf Ekeus meets with Egyptian Foreign Minister 'Amr Musa in Cairo to discuss Egypt's past missile cooperation with Iraq. The meeting is intended to verify information received from Iraq on the joint Egyptian/Iraqi/Argentine Condor II missile program and the joint Egyptian/Iraqi chemical weapons program.

Voice of the Iraqi People (Clandestine), 6/7/95; in FBIS-NES-95-110, 6/7/95 (5194).

FRANCE

FRANCE WITH AUSTRALIA AND UNITED STATES

3/95

Australia announces its intention to make a final decision, before the end of 1995, on whether to equip the RAAF's F-111C/Gs, and possibly F-18s, with Rafael's Popeye or Rockwell's AGM-130 air-to-surface missile. Deliveries of the missiles could then commence by FY 1996-97.

Flight International, 3/29/95-4/4/95, p. 9 (5087).

FRANCE WITH INDIA

6/95

France indicates that it is willing to sell India naval missiles and vessels which have hitherto been supplied to New Delhi only by Russia. These items include submarines and ship-launched surface-to-air and anti-ship missiles.

Rahul Bedi, *Jane's Defence Contracts*, 6/95, pp. 1-2 (5130).

FRANCE WITH IRAN

3/23/95

A close associate of French Interior Minister Charles Pasqua, Jean-Charles Marchiani, is reported to have helped ship arms that were "probably air-to-ground missiles" to Iran, on or near 10/11/94. It is alleged that the arms were transhipped through Algeria and Cyprus.

David Buchan, *Financial Times*, 3/23/95, p. 2 (5222).

FRANCE WITH ITALY AND UNITED ARAB EMIRATES

3/18/95

The UAE is said to be considering acquisi-

tion of the MM-40 Exocet and Otomat (France/Italy) missiles for its coastal defense system.

Jacques de Lestapis, *Jane's Defence Weekly*, 3/18/95, pp. 38-42 (5033).

FRANCE WITH KUWAIT

3/95

Aerospatiale is trying to sell its MM-15 surface-to-surface missile to Kuwait as part of the weapons package in the sale of eight fast patrol boats.

Jane's Defence Weekly, 3/4/95, p. 6 (4969).

3/27/95

France's Ministry of Defense signs a 2.5 billion franc (\$503 million) contract to provide eight 250-ton missile-carrying patrol boats to Kuwait as replacements for naval craft destroyed during the Gulf War. Kuwait is expected to eventually upgrade the boats' weapons systems and France is still offering its MM-15 surface-to-surface missiles.

Andrew Jack, *Financial Times*, 3/28/95, p. 2, (4966).

5/95

Kuwait is reported to have placed a \$300 million order for U.S. Patriot and French MM-40 missiles.

Robin Allen, *Financial Times*, 5/23/95, p. 5 (5201).

FRANCE WITH MALAYSIA

4/95

Malaysia will buy two Yarrow frigates equipped with eight MM-40 Exocets and 16 Seawolf missiles in 1996.

Stewart Walters, *Asian Defense Journal*, 4/95, pp. 37-40 (5056).

FRANCE WITH PAKISTAN

4/95

Pakistan recently purchased SM-39 submarine-launched Exocet missiles, and maintains air-launched AM-39 missiles.

Stewart Walters, *Asian Defense Journal*, 4/95, pp. 37-40 (5056).

6/95

France sells Pakistan three additional Agosta submarines armed with Exocet SM-39 anti-ship missiles.

Rahul Bedi, *Jane's Defence Contracts*, 6/95, pp. 1-2 (5130).

FRANCE WITH TAIWAN

4/18/95

Taiwan's Naval Commander-in-Chief Ku Chung-Lien states that the first of six Lafayette-class missile frigates will be delivered by France in 8/95, or 9/95, and will be re-identified as the Kang Ting-class frigate.

CNA (Taipei), 4/18/95; in FBIS-CHI-95-075, 4/18/95 (4961). Benjamin Yeh, CNA (Taipei), 6/3/95; in FBIS-CHI-95-107, 6/3/95 (5125).

FRANCE WITH UNITED ARAB EMIRATES

3/95

The French company Aerospatiale has sold over 6,000 missiles to the UAE in the last decade, including AM-39 Exocet missiles and MM-40 Exocet missiles.

Jacques de Lestapis, *Jane's Defence Weekly*, 3/18/95, p. 46 (4978).

GERMANY

GERMANY WITH IRAN

3/95

Fifty German scientists are reported to be working in the Iranian civil and military aviation sectors, including Iran's ballistic missile programs.

Intelligence Newsletter, 3/16/95, p. 7 (5219).

GERMANY WITH PRC

5/5/95

Vice-President of China Great Wall Industry Liu Zhixiong, and President of the Sat-

ellite Systems division of Daimler-Benz Peter Denker sign a contract to launch the Nahuel 1 satellite on China's Long March 3C rocket in 1997. The agreement brings to seven China's total number of outstanding launch contracts for GTO satellites.

Tim Furniss, *Flight International*, 5/17/95-5/23/95, p. 18 (4991).

GERMANY WITH RUSSIA

6/95

Russia's Khrunichev State Research and Production Center and Germany's Daimler Benz (DASA) initiate the 'Rockot' project, which will use an SS-19 ICBM attached to a new 'Breeze' upper stage to boost 1,800 kg payloads to low/medium earth orbits. Financed by an innovative debt refinancing package, the project seeks to begin launching from Plesetsk in 1997.

Craig Covault, *Aviation Week & Space Technology*, 6/19/95, pp. 26-27 (5059).

HUNGARY

INTERNAL DEVELOPMENTS

5/95

Hungarian Defense Minister Gyorgy Keleti says that destruction of Hungary's offensive Scud missiles will begin in 5/95.

Karoly Levai, Kossuth Radio Network (Budapest), 5/20/95; in FBIS-EEU-95-098, 5/20/95 (5060).

5/29/95

Hungarian Defense Minister Gyorgy Keleti and representatives from the NATO assembly attend a ceremony during which Hungary's last Scud-B missile is destroyed. Although it is unlikely that nuclear warheads were ever stationed in Hungary, the Scud missiles in question were nuclear-capable.

Tamas Luigits, Kossuth Radio Network (Budapest), 5/29/95; in FBIS-EEU-95-103 (5060).

HUNGARY WITH POLAND

4/28/95

Polish Prime Minister Jozef Olesky and National Defense Minister Zbigniew Okonski meet with Hungarian Defense Minister Gyorgy Keleti and agree to host exercises involving a Hungarian air defense missile unit later in 1995. Poland also raises the possibility of purchasing electronics from Hungary for use in its UAVs.

PAP (Warsaw), 4/28/95; in FBIS-EEU-95-085-A, 4/28/95 (5106).

HUNGARY WITH RUSSIA

5/95

Russia begins talks with the Hungarian Defense Ministry to determine the weapons that Hungary will purchase to reduce its \$300 million debt. Hungarian Defense Ministry spokesman Lajo Erdelyi says Hungary would like to purchase "long-range missile launchers."

Attila Lenart, *Nepszava* (Budapest), 4/27/95, p.3; in FBIS-EEU-95-082, 4/27/95 (5083). *Nepszabadsag* (Budapest), 6/27/95, p. 1; in FBIS-EEU-95-124, 6/27/95 (5136).

HUNGARY WITH UNITED STATES

5/2/95

Hungarian foreign affairs spokesman Gabor Szentivanyi says that Hungary's defense and foreign ministries will sign an agreement with the U.S. to demolish Scud tactical missiles which were decommissioned in the early 1990s.

MTI (Budapest), 5/2/95; in FBIS-EEU-95-085-A, 5/2/95 (5060).

INDIA

INTERNAL DEVELOPMENTS

3/95

India begins small-scale production of the track-mounted C band Rajendra phased-array radar system.

Jane's Defence Weekly, 4/1/95, p. 10 (4970).

3/95

India's first indigenous remotely piloted vehicle (RPV), the Falcon, passes airframe and aerodynamics tests. The Falcon has a 200 km range and is equipped with television and forward-looking infrared sensors.

Defense News, 3/13/95-3/19/95, p. 15 (5047).

3/95

The Wisconsin Project on Nuclear Arms Control's *Risk Report* states that India should be able to target any location on the planet with nuclear weapons in the near future. According to the CIA, India is developing a lightweight nuclear warhead which would make nuclear strikes using the Agni and a future GSLV-ICBM variant a possibility. India is said to have used extensive overt and covert foreign assistance to develop its missile and nuclear programs.

Ali Abbas Rizvi, *Asian Defence Journal*, 3/95, p. 89 (5216).

3/95

The Indian Parliament approves ISRO's budget for FY 1995/96. The PSLV and GSLV take up the majority of the \$330 million budget, which is 31 percent larger for FY 1994/95. The PSLV will receive \$85.19 million for three additional flights; the GSLV will receive \$111.9 million for development of its cryogenic upper stage and \$39.3 for other work. Funding is also provided for an additional launch pad. India also approves the construction of a second launch pad at the Sriharikota Space Center. In 1997, India plans to place a 1,500/2,500 kg satellite into orbit using the GSLV.

Vivek Raghuvanshi, *Space News*, 3/20/95-3/26/95,

p. 8 (5051). *Flight International*, 3/29/94-4/4/95, p. 28 (4975).

3/6/95

ISRO chairman Krishnaswamy Kasturirangan states that India's air-breathing rocket technology developments "have not achieved very much." This is due partially to the financial and scientific requirements of ISRO's PSLV and GSLV programs, which drew resources away from other programs. In 1992, two 3 m long model ABR-200 ramjet vehicles were flight tested at the ISRO's Shriharikota Range, reaching velocities of Mach 2.3. The air-breathing rocket project is headed by J.D.A. Surbaramanyam at the Vikram Sarabhai Space Center in Thiruvananthapuram, southern India.

Vivek Raghuvanshi, *Space News*, 3/20/95-3/26/95, p. 9 (5030).

4/95

The Indian Armament Research and Development Establishment's Pinaka MLRS is currently undergoing trials.

International Defense Review, 4/95, p. 18 (5155). Atul Aneja, *Hindu*, 5/20/95, p. 9 (5223).

4/8/95

India is said to have deployed its short-range Prithvi missile near Hyderabad. The Prithvi can carry chemical or nuclear warheads, although the systems deployed are believed to be conventionally-armed. Production of the Prithvi is currently halted because of U.S. pressure.

Agence France Presse, 4/8/95; in *Executive News Service*, 4/9/95 (5036).

4/10/95

Bharat Electronics Ltd.'s managing director and chairman Janardan Baxi says that the company has developed India's first-ever indigenous civilian/military GPS receiver systems.

Defense News, 4/24/95-4/30/95, p. 25 (5037).

4/26/95

The Akash SAM is test-fired successfully from the Interim Test Range at Chandipur-on-Sea. This is the eighth in a series of trials for the missile. The Akash is an indigenous missile system under development by India's Defense Research and Development Organization (DRDO).

All India Radio Network (Delhi), 4/27/95; in FBIS-EAS-095, 4/27/95 (5156).

4/28/95

India completes formation of the 333 Missile Group and inducts "high quality" officers into the unit. Based in Hyderabad, 333 Missile Group is comprised of 12 Prithvi launchers divided into three subunits of four launchers. The group is expected to join India's Western Command for potential operations against Pakistan and has been assigned "conventional monolith warheads."

Pravin Sawhney, *Asian Age* (Delhi), 4/29/95, p. 1; in FBIS-NES-95-083, 4/29/95 (5195).

5/16/95

Prime Minister Narasimha Rao tells parliament that India will deploy the 150 km-range Prithvi missile along the Indo/Pakistani border.

The Independent, 5/17/95 (5200).

5/18/95

India's Hindustan Aeronautics Ltd. conducts the first test flight of an indigenous engine designed for the Lakshya Unmanned Aerial Vehicle (UAV). It is unclear whether the engine is a turbofan or turbojet model.

Flight International, 5/31/95-6/6/95, p. 18 (5154).

6/95

India's new Pinacha [Pinaka] MLRS has reached the prototype stage. It features 12 214 mm caliber launch tubes mounted on Tatra 815 Kolos cross-country trucks. All 12 launch tubes can be fired in staggered salvos within 40 seconds. The 5 m long, 275 kg Pinacha rockets can be fired to a range of 45 km and carry a 100 kg blast/fragmentation warhead. A battery consists of six Tatra launchers.

Jane's Defence Weekly, 6/10/95, p. 13 (5191). *International Defense Review*, 4/95, p.18 (5155). Atul Aneja, *Hindu*, 5/20/95, p. 9 (5223).

6/95

After a series of managerial changes in the wake of the 1994 ISRO spy scandal, ISRO's Liquid Propulsion Systems Centre (LPSC) sets out to produce indigenous cryogenic engines to power India's future GSLV. Under the directorship of G. Madhavan Nair, former head of India's PSLV project, development efforts are aimed at using liquid

oxygen and hydrogen propellents to produce a cryogenic engine that will be "similar to the Russian one but not the same."

Raj Chengappa, *India Today* (Delhi), 6/30/95, pp. 128-129; in FBIS-NES-95-124, 6/30/95 (5196).

6/95

The special materials plant of India's Nuclear Fuel Complex near Hyderabad produces a special niobium, hafnium, and titanium alloy for use in India's space program. The alloy, which is particularly useful because of its high temperature strength, ductility and weldability, was imported previously from the U.S. The U.S. is the only other manufacturer of this particular alloy.

Hindu, 6/17/95, p. 17 (5207).

INDIA WITH AUSTRALIA

5/21/95

Australian Foreign Minister Gareth Evans tells a news conference that India's deployment of Prithvi missiles is a destabilizing factor in the region. Evans said that India's missile programs are a threat because they can trigger reciprocal arms build-ups by other countries in the region.

Radio Pakistan Network (Islamabad), 5/21/95; in FBIS-NES-95-099, 5/21/95 (5208).

INDIA WITH FRANCE

6/95

France indicates that it is willing to sell India naval missiles and vessels that have been supplied to New Delhi hitherto only by Russia. These items include submarines and ship-launched surface-to-air and anti-ship missiles.

Rahul Bedi, *Jane's Defence Contracts*, 6/95, pp. 1-2 (5130).

INDIA WITH ISRAEL

Late 3/95

Israeli Air Force Commander General Herzl Budinger plans to visit India to discuss the possible sale of Israeli unmanned aerial vehicles and a variety of military aerospace equipment.

Flight International, 3/22/95-3/28/95, p. 13 (4963).

INDIA WITH PAKISTAN

4/18/95

Pakistani Prime Minister Benazir Bhutto says that Indian production of short- and intermediate-range ballistic missiles will have severe repercussions on efforts aimed at reducing reliance on weapons of mass destruction.

PTV Television Network (Islamabad), 4/18/95; in FBIS-NES-95-075, 4/18/95 (4973).

INDIA WITH PAKISTAN AND UNITED STATES

4/95

On a visit to Washington, Pakistani Prime Minister Benazir Bhutto pushes the U.S. to release the F-16 aircraft that Pakistan has already paid for. India threatens to resume production of its Prithvi missile if Pakistan receives the F-16s. Pakistan's response to such a development could be increased procurement of M-11 missiles from China.

Ranit Kumar, *Navbharat Times* (Delhi), 4/17/95, p. 6; in FBIS-NES-95-075, 4/17/95 (5050).

4/95

Speaking before the U.S. House Foreign Relations Subcommittee, U.S. Assistant Secretary of State for South Asian Affairs Robin Raphel says that both India and Pakistan could build a small number of nuclear warheads in short order and that each wants to acquire or develop ballistic missile delivery systems that are nuclear-capable. Raphel says the U.S. is concerned about the possibility of a ballistic missile race in South Asia.

Ali Abbas Rizvi, *Asian Defence Journal*, 4/95, p. 87 (5217).

5/31/95

Pakistani President Farooq Ahmad Khan Leghari says "Pakistan will do whatever is necessary for its security...Pakistan has the means to protest [protect] itself" against the Indian Prithvi and other missile systems which are threatening Pakistan. Leghari adds that while the Prithvi missile is "Pakistan specific," India's Agni missile will also target the Middle East, the Far East, and China. Leghari also says that Pakistan has

asked the U.S. to help dissuade India from producing the Prithvi and that Pakistan "want[s] a zero missile level in the region."

In response to India's missile program, Pakistan has decided to increase the effective range of its Hatf and Anza missile systems.

The Nation (Islamabad), 5/31/95, pp. 1, 3; in FBIS-NES-95-105, 5/31/95 (5197).

INDIA WITH RUSSIA

3/22/95

India announces an agreement with Russia to purchase 12 2S6M Tunguska air defense systems, including eight SA-19 missiles. The final contract price will be set in mid-4/95 at a meeting in Moscow.

Armed Forces Newswire Service, 3/23/95 (4980). Atul Aneja, *Hindu*, 4/1/95, p.2 (5121). Russian Television Network (Moscow), 4/17/95; in FBIS-SOV-95-074, 4/17/95 (5178). *International Defence Review*, 5/95, p. 14 (5203).

3/6/95

ISRO chairman Krishnaswamy Kasturirangan states that GSLV flights will begin by early 1998 and that the first seven flights will be powered by Russian cryogenic engines. Under a renegotiated contract, Russia will now provide India with seven cryogenic engines instead of four. India is attempting to develop an indigenous cryogenic engine production capability for future flights of the GSLV.

Space News, 3/13/95-3/19/95, p. 2 (5032). *Space News*, 4/17/95-4/23/95, p. 16 (5032).

4/21/95

Russian officials announce that Russia will supply India with nine cryogenic rocket boosters for its three-stage GSLV by the year 2000. The first booster is slated for delivery by the end of 1996, with subsequent boosters to be delivered every six months thereafter. India's acquisition of the boosters will make it one of five nations with the capability to launch commercial payloads into geostationary orbit.

Interfax (Moscow), 4/21/95; in FBIS-SOV-95-079, 4/21/95 (5160).

6/95

The Indian Defense Ministry and Russian manufacturer Mikoyan attempt to conclude

a contract for the upgrade of 125 of India's MiGBis [as reported]. The upgrade would fit the aircraft with a weapons and avionics package similar to that of the MiG-21-93, possibly including the Raduga Kh-31 (AS-17 Krypton) air-to-surface missile.

Alexander Velovich, *Flight International*, 6/95, p. 22 (5153).

INDIA WITH UNITED STATES

3/31/95

Walter Lachman and Maurice Subilia, CEO and President respectively of Fiber Materials Inc. and its subsidiary Materials International, are found guilty of violating U.S. export laws for their roles in the shipment of a specially-designed machine control panel to India's Defense Research and Development Laboratory. Shipped to Hyderabad in 4/88, the panel is used to control Hot Isostatic Presses (HIPs), which can be used to produce carbon-carbon, a key component in manufacturing missile nose cones.

Export Control News, 3/31/95, pp. 4-7 (5218).

IRAN

INTERNAL DEVELOPMENTS

3/1/95

According to diplomatic and naval sources in the Gulf, Iran has loaded Hawk SAMs onto pre-deployed launchers on Sirri Island in the Strait of Hormuz. An Iranian source said the deployment, which was part of a five-day naval exercise, was in response to Israeli threats to bomb the Iranian Bushehr nuclear facility near Tehran. Gulf diplomats say recent revelations regarding Iran's deployment of Hawk missiles on Sirri Island were part of a U.S. strategy "to demonize the Islamic republic...." According to one European diplomatic source, it is unlikely that Iran will use the Hawks to interdict Gulf oil shipping, as the U.S. has asserted, be-

cause they are anti-air not anti-ship missiles. Following the deployment of Hawk missiles on Sirri Island, Iran now has missiles stationed on both sides of the only deep-water channel in the Gulf, through which more than 20 per cent of the world's oil is shipped.

Youssef Azme, *Reuter*, 3/1/95 (5226).

3/5/95

Iran is reported to have conducted its first full-scale military maneuvers incorporating its recently acquired Kilo-class diesel-electric submarines. The maneuvers follow U.S. assertions that Iran has deployed Hawk anti-aircraft missiles on the Sirri Island and at other locations in the Gulf. Iran is also reported to have deployed Chinese 'Silkworm' and Ukrainian-supplied 'Sunburst' [sic] missiles on Sirri Island and elsewhere in the Strait of Hormuz.

James Bruce, *Jane's Defence Weekly*, 3/18/95, p. 5 (5224).

5/22/95

Iran begins a five-day maneuver of its 'Falaq-3' missile forces. The maneuvers incorporate elements of the Islamic Republican Army and the Islamic Revolutionary Guards Corps in the Strait of Hormuz. On the first day of the exercise the two units are reported to have successfully operated each other's equipment.

IRNA (Tehran), 5/23/95; in FBIS-NES-95-100, 5/23/95 (5223).

6/20/95

First Deputy Commander of the Islamic Revolution Guard Corps Brigadier General Rahim Safavi says the second phase of the 'Ashura' maneuvers included Katyusha MLRS systems, SSMs, ASMs, and anti-ship missiles.

IRNA (Tehran), 6/20/95; in FBIS-NES-95-119, 6/20/95 (5225).

IRAN WITH AZERBAIJAN

6/95

Azerbaijan sells six Kub air defense missile launchers to Iran. Due to their poor condition, Iran is forced to cannibalize them to make three serviceable launchers.

Aleksandr Sychev, *Izvestiya* (Moscow), 6/6/95, p. 3; in JPRS-UMA-95-025, 6/6/95 (5104).

IRAN WITH FRANCE

3/23/95

A close associate of French Interior Minister Charles Pasqua, Jean-Charles Marchiani, is reported to have helped ship arms that were "probably air to ground missiles" to Iran on or near 10/11/94. It is alleged that the arms were transshipped through Algeria and Cyprus.

David Buchan, *Financial Times*, 3/23/95, p. 2 (5222).

IRAN WITH GERMANY

3/95

Fifty German scientists are reported to be working in the Iranian civil and military aviation sectors, including Iran's ballistic missile programs.

Intelligence Newsletter, 3/16/95, p. 7 (5219).

IRAN WITH ISRAEL AND UKRAINE

5/95

Israel denounces Ukraine's sale of eight SS-N-22 'Sunburst' [sic] anti-ship cruise missiles to Iran. Ukraine is reported to have sold the cruise missiles to Iran for \$450,000 each after it failed to sell the missiles to the U.S.

Agence France Presse International News, 5/14/95; in *International Security Digest*, 5/95 (5229).

5/95

Ukrainian Ambassador Ivan Maydan rejects Israeli accusations that his country is selling anti-ship missiles to Iran. Maydan says that Tehran and Kiev are cooperating on political, economic, and cultural matters and that he hopes for increased ties between the two countries.

IRNA (Tehran), 5/17/95; in FBIS-NEW-95-096, 5/17/95 (5111).

IRAN WITH LIBYA

4/95

According to Western intelligence agencies, Iran and Libya have agreed to cooperate on

the development of long-range ballistic missiles. Libya is said to be developing a 600 mile-range SSM and has allegedly offered \$31 million for material and know-how that Iran has garnered from the DPRK, the PRC, and Western sources.

Times, 4/1/95; in *International Security Digest*, 4/95 (5228).

IRAN WITH NORTH KOREA

4/5/95

In an unclassified follow-on report to the Senate Select Committee on Intelligence, the CIA states that "We have good reason to believe that North Korea has recently transferred at least four Scud Transporter-Erector-Launchers (TELs) to Iran." The transfer is believed to have doubled the number of TELs in the Iranian inventory, estimated in 1994 to be about 10 by the Tel Aviv-based Jaffee Center for Strategic Studies and about six by London's International Institute for Strategic Studies. Transferred in late 1994, the TELs can launch Scud-B and -C missiles but not the No-dong-1.

Tony Capaccio, *Defense Week*, 5/1/95, pp. 1, 14 (5184).

IRAN WITH PAKISTAN

5/3/95

Chief of the Awami Qiyat Party and former Pakistani Army Commander in Chief General Mirza Aslam Beg (ret.) states that the Pakistani government has cancelled 11 production agreements with Iran under U.S. pressure.

Khabrain (Islamabad), 5/5/95, p. 10; in FBIS-NES-95-090, 5/5/95 (5210).

IRAN WITH PAKISTAN AND PRC

6/95

A CIA report indicates that China recently transferred missile system components to Iran and Pakistan in possible violation of the MTCR. If a violation has occurred, the U.S. would be required to impose sanctions, say U.S. officials. The CIA report states that over the past 12 months China has de-

livered dozens, if not hundreds, of computerized machine tools and missile guidance systems, giving Iran the ability to increase its North Korean Scud missile accuracy and to build its own Scud-type missiles. Since 3/95, China is also believed to have transferred parts to Pakistan that could be used in M-11 missiles. A Chinese Foreign Ministry spokesman said China was abiding by its commitment to the MTCR and that the CIA report was "groundless."

Elaine Sciolino, *New York Times*, 6/22/95, pp. A1, A7 (5139).

IRAN WITH PAKISTAN AND RUSSIA

4/17/95

Two Russian scientists admit that they collaborated by electronic mail with Iran and Pakistan on nuclear- and missile-related issues. It is also reported that the DPRK attempted to entice over 100 Russian missile experts to work on upgrading Scud-C missiles.

Alan Cooperman and Kyrell Belianov, *US News & World Report*, 4/17/95, pp. 45, 48 (5253).

IRAN WITH PRC

4/95

China apparently helped Iran develop the Oghab (Eagle) missile and a Scud-B missile production line.

Pamela Pohling Brown, *Strategic Digest*, 4/95, pp. 493-494 (5012).

6/16/95

U.S. officials say China has cancelled a forthcoming meeting at which the U.S. had planned to address concerns that China might have transferred sensitive ballistic missile technology to Iran. According to U.S. sources, China might be providing Iran with materials, equipment, and know-how to produce medium-range ballistic missiles. A U.S. official explains that China's assistance to Iran might be in the realm of short-range rockets not covered by the MTCR. A *Defense News* article claims that the U.S. has strong evidence that the Chinese transferred medium-range ballistic missile technology. A U.S. official refutes this,

saying the *Defense News* story "goes beyond what our current information would support."

R. Jeffrey Smith, *Washington Post*, 6/17/95, p. A14 (5221).

6/20/95

Chinese Foreign Ministry spokesman Chen Jian denies a 6/19/95 *Defense News* report that China sold missile technology to Iran in contravention of the MTCR. An internal CIA report is said to detail the missile transfers.

Thomas Beal, UPI (Beijing); in *Executive News Service*, 6/20/95 (5251).

IRAN WITH RUSSIA

4/95

Russian officials decline to comment on the possible sale of an "ultrasophisticated" submarine to Iran. Western military analysts claim the submarine is equipped with the Iglu anti-aircraft missile system.

Stanislav Kucher and Dmitriy Kulik, *Komsomolskaya Pravda* (Moscow), 4/29/95, p. 3; in FBIS-SOV-95-083, 4/29/95 (5113).

5/95

Russia's need for hard currency makes an arms deal with Iran probable despite a potentially adverse U.S. reaction, according to reports from Moscow. The deal may include S-300-PMU-1 SAM systems, Tunguska anti-aircraft systems, and project-12318 missile launchers.

Igor Korotchenko, *Nezavisimaya Gazeta* (Moscow), 5/12/95, p. 2 (5071).

IRAQ

INTERNAL DEVELOPMENTS

5/95

U.S. satellite imagery from late 1994 and 1995 show significant reconstruction has taken place at several important Iraqi industrial sites. The al-Kindi Missile Research

and Development Facility at Mosul has been expanded substantially beyond its pre-Gulf War dimensions. New information also indicates that Iraq still possesses 12 Frog-7 launchers and 120 Luna (FROG) missiles belonging to Kuwait.

James Bruce and Barbara Starr, *Jane's Defence Weekly*, 5/6/95, p. 4 (5150).

IRAQ WITH EGYPT AND SUDAN

4/95

In early 1/91 the Sudanese government reportedly received missile systems from Iraq and targeted them against sites in Egypt, including the Aswan High Dam. Sudan was allied with Iraq during the Gulf War of 1991.

Aleksandr Ivanov, *Nezavisimaya Gazeta* (Moscow), 4/18/95, p. 2; in FBIS-SOV-95-079, 4/18/95 (5205).

IRAQ WITH UNITED NATIONS

2/21/95

General Wafiq Samra'i, the former head of Iraqi intelligence who defected to the West, writes a letter to UNSCOM Chief Rolf Ekeus claiming that Iraq is still hiding long-range missiles and chemical and biological weapons. Ekeus describes the U.N. long-term monitoring effort as satisfactory, although there is some concern about Iraq's biological weapons. In 1994, Samra'i claimed Iraq was hiding possibly 10 TEL systems and up to 80 Scud-B and al-Hussein missiles.

Leon Barkho, *Reuter*, 2/22/95; in *Executive News Service* (5046).

3/13/95

The U.N. Security Council decides to continue sanctions against Iraq after the U.S. proved that it had rebuilt factories capable of producing missiles in contravention of existing U.N. resolutions.

Robert Corzine, *Financial Times*, 3/14/95, p. 4 (4955).

6/19/95

Iraq says it will cooperate fully with UNSCOM officials by surrendering documents pertaining to its biological weapons materials only if the U.N. closes its investi-

gation of Iraq's chemical weapons and long-range ballistic missile programs. Head of UNSCOM Rolf Ekeus states that he is convinced that Iraq no longer has any "significant capabilities" in the areas of chemical weapons and ballistic missiles.

Evelyn Leopold, Reuter, 6/20/95; in Executive News Service, 6/20/95 (5190).

ISRAEL

INTERNAL DEVELOPMENTS

2/20/95

The Israel Aircraft Industries' (IAI) Heron long-endurance unmanned air vehicle (UAV) reaches a 32,000 ft altitude during a test-flight.

Flight International, 3/1/95-3/7/95, p. 13 (4958).

3/95

Israel's Rafael Armament Development Authority is reported to have flight tested a turbofan-powered variant of its Popeye stand-off missile.

Flight International, 3/1/95-3/7/95, p. 12 (4957).

4/95

Israel begins development of a 2,000 km extended-range variant of its 1,500 km-range Jericho-2 IRBM, after launching the Offeq-3 satellite into orbit using the Jericho-based Shavit SLV.

Flight International, 4/19/95-4/25/95, p. 4 (4959).

6/95

Israel Aircraft Industries (IAI) will begin flight-testing the Elta designed ELM2022-U maritime surveillance radar aboard its Heron unmanned air vehicle (UAV). The radar has a multi-target-track-while-scan capability for up to 32 targets and a 120 km (64 nm) detection range for small ships.

Flight International, 6/7/95-6/13/95, p. 22 (5045).

6/95

TAAS officials announce that their Delilah anti-radar missile, which has autonomous

targeting capability, is now available for export.

Jane's Defence Weekly, 6/17/95, p. 6 (5133).

6/95

Israel's Silver Arrow displays its new Darter front-line combat unmanned air vehicle (UAV) as well as its new Colibri operator trainer UAV at the Paris Air Show. The Darter, which has a length and wingspan slightly under 4 m, has a 90 km (50 nm) mission radius and a flight duration of up to 10 hours. It is launched by a vehicle-mounted bungee launcher and is recovered by parachute. The Colibri was designed to train UAV operators in all areas of unmanned flight. Silver Arrow also announces the development of the Hermes-750, an upgraded version of its Hermes-450. The Hermes, which is scheduled to fly in 1/96, has a 750 kg maximum take-off weight and a flight duration exceeding 30 hours.

Flight International, 6/14/95-6/20/95, p.12 (5231).

ISRAEL WITH AUSTRALIA

4/23/95

Australian Defense Minister Robert Ray visits Israel and discusses the possible purchase of the Israeli Aircraft Industries/Rafael Barak-1 point-defense missile systems for the Australian Navy's FFG-7 frigates.

Flight International, 4/26/95-5/2/95, p. 14 (5088).

ISRAEL WITH INDIA

Late 3/95

Israeli Air Force Commander General Herzl Budinger plans to visit India to discuss the possible sale of Israeli unmanned aerial vehicles and a variety of military aerospace equipment.

Flight International, 3/22/95-3/28/95, p. 13 (4963).

ISRAEL WITH IRAN AND UKRAINE

5/95

Israel denounces Ukraine's sale of eight SS-N-22 'Sunburst' [sic] anti-ship cruise missiles to Iran. Ukraine is reported to have sold the cruise missiles to Iran for \$450,000

each after it failed to sell the missiles to the U.S.

Agence France Presse International News, 5/14/95; in *International Security Digest*, 5/95 (5229).

5/95

Ukrainian Ambassador Ivan Maydan rejects Israeli accusations that his country is selling anti-ship missiles to Iran. Maydan says that Tehran and Kiev are cooperating on political, economic, and cultural matters and that he hopes for increased ties between the two countries.

IRNA (Tehran), 5/17/95; in FBIS-NEW-95-096, 5/17/95 (5111).

ISRAEL WITH UNITED KINGDOM

4/95

Senior officials from the U.K. Ministry of Defence are briefed on the Israeli Arrow system and Rafael's Python-4 short-range infrared-guided missile during a visit to Israel. Israel offers a limited number of Python-4s for the RAF's front-line aircraft pending the RAF's deployment of British Aerospace's Advanced Short-Range Air-to-Air Missile (ASRAAM) around the year 2000.

Douglas Barrie, *Flight International*, 4/26/95-5/2/95, p. 5 (4968).

6/95

Silver Arrow, Israel's manufacturer of unmanned air vehicles (UAV), purchases an 80 percent share of its U.K. engine supplier, Alvis UAV Engines. Alvis' 741 engine powers both the Hermes and Darter UAVs.

Flight International, 6/7/95-6/13/95, p. 32 (5043).

ISRAEL WITH UNITED STATES

3/95

The U.S. Ballistic Missile Defense Organization (BMDO) plans to award a follow-on contract to Israel's Wales company to determine whether Israel's Boost-phased Intercept System (IBIS) will meet U.S. Theater Missile Defense (TMD) requirements by modifying and simulating preliminary IBIS results.

International Defense Review, 3/95, p. 17 (4962).

6/95

Unnamed senior sources from Israel's defense establishment say that if Israel withdraws from the Golan Heights, it should be compensated with U.S. funding for the manufacture and deployment of operational Arrow missiles. It is reported that the Arrow missile is necessary to counter Syria's Scud-C missiles, which would come down in a "barrage" if Damascus launched a surprise offensive. Syria is reported to have 62 launchers and hundreds of surface-to-surface missiles.

Qobi Marenko, Channel 2 Television Network (Jerusalem), 6/21/95 (5131).

ITALY

ITALY WITH BRAZIL

3/95

Italy's Alenia Sistemi Navali wins a \$160 million Brazilian contract to supply and equip 6 Niteroi navy frigates with 6 Albatros-Aspide SAM systems.

Andrew Hill, *Financial Times*, 3/14/95, p. 9 (4964).

ITALY WITH FRANCE AND UNITED ARAB EMIRATES

3/18/95

The UAE is reported to be considering procurement of the MM-40 Exocet and Otomat (France/Italy) missiles for its coastal defense system.

Jacques de Lestapis, *Jane's Defence Weekly*, 3/18/95, pp. 38-42 (5033).

JAPAN

JAPAN WITH PRC

Spring 1995

Japan expresses concern about China's test of the Dong Feng-31 ICBM from a mobile missile launcher. The chairman of the Japanese Defense Agency Joint Staff Council, General Tetsuya Nishimoto, says he intends to press China to increase the transparency of its nuclear and missile development programs.

Neville de Silva, *Hong Kong Standard* (Hong Kong), 6/3/96, p. 8; in FBIS-CHI-95-107, 6/3/95 (5089). *Sankei Shimbun* (Tokyo), 5/31/95, p. 1; in FBIS-CHI-95-105 (5147).

JAPAN WITH UNITED STATES

3/25/95

Commander of the U.S. Seventh Fleet Rear Admiral Archie Clemens urges the Japanese Defense Agency to purchase additional Aegis destroyers for incorporation into a proposed joint U.S.-Japan theater missile defense (TMD) system.

Naoaki Usui, *Defense News*, 4/3/95, p. 3 (5091).

4/1/95

The Japanese Defense Agency (JDA) creates the Ballistic Missile Defense Study Office. The new office will work with the U.S. BMDO and the U.S. Pacific Command to determine the threat posed by ballistic missiles, such as North Korea's No-dong-1. Japanese officials emphasize that the new program does not represent a commitment to fielding a TMD system. It is reported that the JDA is divided internally between those wanting a system to counter threats and those who are concerned about spending money on a potentially ineffective system.

Naoaki Usui, *Defense News*, 4/3/95, p. 3 (5091). *Mainichi Shimbun* (Tokyo), 3/17/95, p.3 (5126).

KAZAKHSTAN

KAZAKHSTAN WITH RUSSIA

4/95

Kazakhstan begins decommissioning missile silos that once housed Soviet SS-18 ICBMs. Destruction of the silos will be completed by Russia's Strategic Missile Forces, in accordance with a bilateral agreement between Kazakhstan and Russia.

Fedor Ignatov, *Itar-Tass* (Moscow), 4/24/95; in FBIS-SOV-95-078, 4/24/95 (5167).

4/24/95

The Russian Strategic Missile Forces' press center announces that the withdrawal of 104 SS-18 ICBMs from Kazakhstan to Russia is complete. The missile withdrawal is in accordance with Kazakhstani agreements to eliminate nuclear missiles from its territory following the breakup of the Soviet Union.

NTV Television (Moscow), 4/25/95; in FBIS-SOV-95-091, 4/25/95 (5025). Doug Clarke, *Omri Daily Digest*, 5/29/95 (5041). *Interfax* (Moscow), 5/26/95; in FBIS-SOV-95-103, 5/26/95 (5117).

5/95

Kazakhstani Defense Minister Army General Sagadat Nurmagambetov observes the destruction of an ICBM silo on a visit to a regiment of the Russian Strategic Missile Forces in Derzhanvinsk, north Kazakhstan. According to the terms of the START I Treaty, the division is dismantling its launch site prior to being deactivated.

Anatoliy Ladin, *Krasnaya Zvezda* (Moscow), 5/19/95, p. 1; in FBIS-SOV-95-098, 5/19/95 (5105).

KAZAKHSTAN WITH UNITED STATES

4/5/95

U.S. Secretary of Defense William Perry meets Kazakhstan President Nursultan Nazarbayev to explore potential joint venture defense projects and to discuss international and regional security issues. Perry announces that four U.S. companies will invest more than \$21 million to convert Kazakhstani defense industries. This will

include conversion of the Gidromash enterprise from the production of missile systems to the production of pressure valves and containers for cryogenic materials.

Sovety Kazakhstana (Almaty), 4/7/95, p.1; in FBIS-SOV-070, 4/7/95 (4983). *Krasnaya Zvezda* (Moscow), 4/7/95, p. 1; in FBIS-SOV-95-068, 4/7/95 (4983).

KUWAIT

KUWAIT WITH FRANCE

3/95

Aerospatiale is trying to sell its MM-15 surface-to-surface missile to Kuwait as part of the weapons package in the sale of eight fast patrol boats.

Jane's Defence Weekly, 3/4/95, p. 6 (4969).

3/27/95

France's Ministry of Defense signs a 2.5 billion franc (\$503 million) contract to provide eight 250-ton missile-carrying patrol boats to Kuwait as replacements for naval craft destroyed during the Gulf War. Kuwait is expected to eventually upgrade the boats' weapons systems, and France is still offering its MM-15 surface-to-surface missiles.

Andrew Jack, *Financial Times*, 3/28/95, p. 2, (4966).

5/95

Kuwait is reported to have placed a \$300 million order for U.S. Patriot and French MM-40 missiles.

Robin Allen, *Financial Times*, 5/23/95, p. 5 (5201).

KUWAIT WITH RUSSIA

3/95

Kuwait is reported to have ordered 27 Smerch multiple rocket systems with the newly-developed 9M55K1 warhead. The warhead has five submunitions (15 kg each), and seeks targets using two-spectrum infra-

red seekers.

Jane's Defence Weekly, 4/15/95, p.6 (5040).

4/95

Kuwait is interested in buying an unspecified number of Russian S-300 'Grumble' missile systems.

Charles Bickers, *Jane's Defence System*, 4/8/95 (5112).

LIBYA

LIBYA WITH IRAN

4/95

According to Western intelligence agencies, Iran and Libya have agreed to cooperate on the development of long-range ballistic missiles. Libya is said to be developing a 600 mile-range SSM and has allegedly offered \$31 million for material and know-how that Iran has garnered from the DPRK, the PRC, and Western sources.

Times, 4/1/95; in *International Security Digest*, 4/95 (5228).

MALAYSIA

MALAYSIA WITH FRANCE

4/95

In 1996, Malaysia will buy two Yarrow frigates equipped with eight MM-40 Exocets and 16 Seawolf missiles.

Stewart Walters, *Asian Defense Journal*, 4/95, pp. 37-40 (5056).

MISSILE TECHNOLOGY CONTROL REGIME DEVELOPMENTS

2/95

The head of Brazil's Strategic Affairs Secretariat Ambassador Ronaldo Sardemberg has informed U.S. Ambassador Melvin Levitsky of Brazil's intention to join the MTCR. Brazil has expressed interest in joining the MTCR since early 1994 and established norms for national export controls in 12/94.

Leandro Fortes, *Jornal Do Brasil* (Rio de Janeiro), 2/7/95, p. 4, in JPRS-TAC-95-001, 2/14/95, p. 6. *Defense News*, 4/24/95-4/30/95, p. 6 (5145).

4/95

Bahrain seeks to acquire AMRAAM missiles to upgrade its F-16 fighter aircraft's standoff requirement. Bahrain also seeks to obtain the U.S. Army Tactical Missile System for its existing MLRS but, according to a Pentagon official, the U.S. is restricted from transferring this system under the MTCR.

Philip Finnegan, *Defense News*, 4/17/95, pp. 1, 45 (5048).

4/95

The Russian enterprise STC Complex and the Australian Space Office initiate a study into the feasibility of launching Russia's Start SLV from Australia, taking into account their MTCR obligations. The study is expected to be complete by the third quarter of 1995. Russia could then begin shipping rockets to Australia in 1997.

Warren Ferster, *Defense News*, 4/24/95-4/30/95, p. 29 (4982). Warren Ferster, *Space News*, 4/24/95-4/30/95, p. 24 (5062).

4/20/95

In an interview, Director of the Brazilian Space Agency Ajax Barros de Melo says that Brazil's commitment to join the MTCR, possibly by 10/95, should strengthen its relationship with the U.S. In particular, De Melo notes the significance of an anticipated

memorandum of understanding with the U.S. to facilitate future cooperation on space projects. Brazil's space efforts are focused on the VLS satellite launcher and development of the Alcantara launch site for commercial launch purposes. Brazil expects that full MTCR membership will allow it to acquire advanced technology which will then enable it to meet the scheduled 4/96 launch date for the new expendable launch vehicle.

Patrick Seitz, *Space News*, 4/24/95-4/30/95, pp. 3, 29 (5144).

5/95

Argentine Foreign Minister Guido Di Tella says that suspension of the Condor missile project and the accession of his country to the MTCR, together with other arms control policies, elevates Argentina to an exemplary position in the international community.

Susana Merlo, *Ambito Financiero* (Buenos Aires), 5/17/95, p. 16; in FBIS-LAT-95-098, 5/17/95 (5006).

5/95

The Clinton administration determines that Russia recently transferred advanced missile technology to Brazil but indicates in a secret memo to Congress that it will waive sanctions. According to a Clinton administration official, the decision to waive sanctions over the sale of carbon fiber, which is used in building rocket motor cases, comes after a Russian promise to stop sales to Brazil. A Brazilian official says that Brazil's 2/94 [as published] promise to adhere to MTCR guidelines applies only to the sale and not to the purchase of missile technology. U.S. officials say the decision to waive sanctions is part of an effort to encourage Brazil to become a full MTCR member. Other U.S. officials are quoted as saying the waiver could trigger instability in South America, prompting Argentina to renew its Condor program. A Washington-based non-proliferation expert says the lack of commercial demand for Argentine and Brazilian space launch vehicles may lead to an increased risk of the technology being transferred to ballistic missile programs.

R. Jeffrey Smith, *Washington Post*, 6/8/95, pp. A23, A27 (5146). Warren Ferster, *Space News*, 6/12/95-6/18/95, p. 12 (5234).

5/95

Some MTCR member states, including the U.S., the U.K., and Germany, express concern over Russia's apparent willingness to export long-range cruise missiles. Russia is currently holding discussions with MTCR partners in an effort to become a full member of the regime as soon as 10/95. While Russian President Yeltsin is said to favor full membership for Russia, some military and defense officials "view the regime with suspicion."

Flight International, 5/24/95-5/30/95, p. 26 (5042).

5/15/95

A U.S. Congress Office of Technology Assessment report recommends caution to U.S. companies and government agencies wanting to form joint enterprises with Russian partners. The report says that continued Russian adherence to MTCR Guidelines should be an important consideration in any cooperation with Russia.

Ben Ionnatta, *Space News*, 5/22/95-5/28/95, p. 17 (5166).

5/28/95

China's Foreign Ministry spokesman Shen Guofang announces that Beijing is to postpone consultations with the U.S. on the MTCR in response to the U.S. decision to allow Taiwan's President Lee Teng-hui to visit. Shen adds that China is also postponing the 6/95 visit of the Director of the U.S. Arms Control and Disarmament Agency and the 7/95 visit of the Deputy Assistant Secretary of State for Politico-Military Affairs.

Xinhua (Beijing), 5/28/95; in FBIS-CHI-95-103, 5/28/95 (4994). Steven Mufson, *International Herald Tribune*, 5/29/95 (5008).

6/95

At the 7/95 MTCR conference, Canada will resurrect its two-year-old proposal to ban all ballistic missiles with ranges of 300-5,500 km, despite lack of support from the U.S. The plan does not seek to replace the MTCR. Cruise missiles would not be included in the proposed ban.

International Defense Review, 6/95, p. 5 (5077).

6/95

A CIA report indicates that China recently transferred missile system components to Iran and Pakistan in possible violation of the MTCR. If a violation has occurred, the U.S. would be required to impose sanctions, say U.S. officials. The CIA report states that over the past 12 months China has delivered dozens, if not hundreds, of computerized machine tools and missile guidance systems, giving Iran the ability to increase its North Korean Scud missile accuracy and to build its own Scud-type missiles. Since 3/95, China is also believed to have transferred parts to Pakistan that could be used in M-11 missiles. A Chinese Foreign Ministry spokesman said China was abiding by its commitment to the MTCR and that the CIA report was "groundless."

Elaine Sciolino, *New York Times*, 6/22/95, pp. A1, A7 (5139).

6/2/95

Brazil has a potential nuclear delivery arsenal which includes land-based Sonda rockets, as well as tactical warheads mounted on ground-based SS-300 missiles and on Barracuda sea-launched missiles. An ICBM with a range of over 3,000 km could also be built by converting the Veiculo Lancador de Satelites (VLS) SLV, which is still under development by the Instituto de Aeronautica e Espaco. The three-stage, solid-fuel VLS is based on the Sonda 4 sounding rocket and stands 19 m high with four strap-on motors. The VLS is capable of placing a 200 kg payload into a 750 km, 25-degree orbit, or a 500 km sun-synchronous orbit. The VLS is scheduled for its first launch in 6/96. Although its development has been slowed by MTCR restrictions, Brazil is said to have obtained advanced technology, including micro-electronics, from Russia and elsewhere via the black market. Construction of a nuclear submarine in Rio de Janeiro will be completed by the year 2000. The total number of Brazilian vehicles capable of carrying nuclear warheads may rise to several hundred in the future, possibly to include several cruise missiles.

Nilolay Kuchin, *Novoye Vremya* (Moscow), 5/95; in FBIS-LAT-95-106, 6/2/95 (5017). Time Furniss, *Flight International*, 6/21/95-6/27/95, p. 50 (5235).

6/14/95

Tom Wheeler, director for multilateral affairs in the South African Department of Foreign Affairs, says South Africa intends to join the MTCR.

Jeff Erlich and Theresa Hitchens, *Defense News*, 6/19/95-6/25/95, p. 26 (5236).

6/16/95

U.S. officials say China has cancelled a forthcoming meeting at which the U.S. had planned to address concerns that China might have transferred sensitive ballistic missile technology to Iran. According to U.S. sources, China might be providing Iran with materials, equipment, and know-how to produce medium-range ballistic missiles. A U.S. official explains that China's assistance to Iran might be in the realm of short-range rockets not covered by the MTCR. A *Defense News* article claims that the U.S. has strong evidence that the Chinese transferred medium-range ballistic missile technology. A U.S. official refutes this, saying the *Defense News* story "goes beyond what our current information would support."

R. Jeffrey Smith, *Washington Post*, 6/17/95, p. A14 (5221).

6/20/95

Chinese Foreign Ministry spokesman Chen Jian denies a 6/19/95 *Defense News* report that China sold missile technology to Iran in contravention of the MTCR. An internal CIA report is said to detail the missile transfers.

Thomas Beal, UPI (Beijing); in Executive News Service, 6/20/95 (5251).

6/22/95

Pakistan says that it has not received any shipments of M-11 missile components from China and that the U.S. has not produced any evidence to the contrary. Pakistan also denies that it has violated the MTCR.

Xinhua (Beijing), 6/22/95; in FBIS-CHI-95-121, 6/22/95 (5198).

NORTH ATLANTIC TREATY ORGANIZATION

INTERNAL DEVELOPMENTS

2/28/95

As part of its "southern strategy" to address instability in North Africa and the Middle East, NATO ambassadors commit to discussions with representatives from Egypt, Israel, Morocco, Tunisia, and Mauritania. The talks will focus on missile proliferation and Islamic fundamentalism. They are aimed at closer ties, the exchange of information and, perhaps, broader security cooperation.

Lionel Barber and Bernard Gray, *Financial Times*, 2/9/95, p. 1 (4740).

4/95

NATO's national armaments directors meet to establish a study group to identify ways in which the alliance's air defenses can be improved, particularly against missiles. The need to prevent missile attacks from ranges of up to 1,800 miles is emphasized.

Armed Forces Newswire, 4/12/95 (5095).

NORTH KOREA

INTERNAL DEVELOPMENTS

4/95

Japanese government spokesman Kozo Igarashi announces that North Korea tested several anti-ship missiles over the Sea of Japan in late 3/95. The missiles are apparently based on the Chinese Silkworm antiship missiles. Igarashi notes, "We understand they were fired as part of a routine practice."

Reuter, 4/7/95; Executive News Service, 4/7/95 (5175).

6/95

U.S. officials confirm that six No-dong-1 missiles mounted on TELs have entered service in North Korea since 2/95.

Paul Beaver, *Jane's Defence Weekly*, 6/24/95, p. 22 (5183).

6/18/95

An unidentified source in the Japanese government, citing U.S. government information, says a U.S. reconnaissance satellite covering North Korea had spotted cranes and trucks transporting missiles for a test-launch likely to take place at the end of 6/95.

Sankei Shimbun (Tokyo), 6/19/95, p. 1; in FBIS-EAS-95-117, 6/19/95 (5182).

NORTH KOREA WITH IRAN

4/5/95

In an unclassified follow-on report to the Senate Select Committee on Intelligence, the CIA stated that "We have good reason to believe that North Korea has recently transferred at least four Scud Transporter-Erector-Launchers (TELs) to Iran." The transfer is believed to have doubled the number of TELs in the Iranian inventory, estimated in 1994 to be about 10 by the Tel Aviv-based Jaffee Center for Strategic Studies and about six by London's International Institute for Strategic Studies. Transferred in late 1994, the TELs can launch Scud-B and -C missiles but not the No-dong-1.

Tony Capaccio, *Defense Week*, 5/1/95, pp. 1, 14 (5184).

NORTH KOREA WITH UNITED STATES

3/13/95

The U.S. Embassy releases a statement from Under Secretary for Arms Control and International Security Lynn Davis which says that the U.S. will not normalize relations with North Korea until it stops exporting missiles to countries such as Iran and Syria.

Yonhap (Seoul), 3/13/95; in FBIS-EAS-95-048, 3/13/95, (5174).

6/95

[U.S. Ambassador-at-Large] Robert Gallucci says that the U.S. intends to negotiate North

Korea's cessation of ballistic missile production and export. Gallucci also says: "The longest range missiles under development now are in the 4,000 to 5,000 kilometer range. These missiles are not only for force projection in Northeast Asia, we believe, but also for export."

Yonhap (Seoul), 6/16/95; in FBIS-EAS-95-116, 6/16/95 (5252).

PAKISTAN

INTERNAL DEVELOPMENTS

3/95

The Pakistani Air Force's principal duties include striking India's SSM launchers and providing tactical air support to both naval and ground forces. It is also reported that Pakistan possesses two Agosta class submarines equipped with Sub-Harpoon.

Brian Cloughley, *International Defense Review*, 3/95, pp. 72-78 (5035).

5/95

According to U.S. sources, Pakistan's Space and Upper Atmosphere Research Commission (SUPARCO) is attempting to acquire sensitive equipment and materials related to the production of ballistic missiles. Pakistan has been working secretly on a new SSM with a 600 km range and is planning new variants of the Khatf-2 [Hatf-2] missile.

Foreign Report, 5/18/95 (5233). *Foreign Report*, 5/18/95, in *International Security Digest*, 5/95 (5202).

5/3/95

Chief of the Awami Qiyat Party and former Pakistani Army Commander in Chief General Mirza Aslam Beg (Ret.) states that the Pakistani government has ceased production of the M-11 missile.

Khabrain (Islamabad), 5/5/95, p. 10; in FBIS-NES-95-090, 5/5/95 (5210).

PAKISTAN WITH FRANCE

4/95

Pakistan recently purchased SM-39 submarine-launched Exocets, and maintains air-launched AM-39.

Stewart Walters, *Asian Defense Journal*, 4/95, pp. 37-40 (5056).

6/95

France sells Pakistan three more Agosta submarines armed with Exocet SM-39 anti-ship missiles.

Rahul Bedi, *Jane's Defence Contracts*, 6/95, pp. 1-2 (5130).

PAKISTAN WITH INDIA

4/18/95

Pakistani Prime Minister Benazir Bhutto says that Indian production of short- and intermediate-range ballistic missiles will have severe repercussions on efforts aimed at reducing reliance on weapons of mass destruction.

PTV Television Network (Islamabad), 4/18/95; in FBIS-NES-95-075, 4/18/95 (4973).

PAKISTAN WITH INDIA AND UNITED STATES

4/95

On a visit to Washington, Pakistani Prime Minister Benazir Bhutto pushes the U.S. to release the F-16 aircraft that Pakistan has already paid for. India threatens to resume production of its Prithvi missile if Pakistan receives the F-16s. Pakistan's response to such a development could be increased purchases of M-11 missiles from China.

Ranit Kumar, *Navbharat Times* (Delhi), 4/17/95, p. 6; in FBIS-NES-95-075, 4/17/95 (5050).

4/95

Speaking before the U.S. House Foreign Relations Subcommittee, U.S. Assistant Secretary of State for South Asian Affairs Robin Raphel says that both India and Pakistan could build a small number of nuclear warheads in short order and that each wants to acquire or develop ballistic missile delivery systems that are nuclear-capable. Raphel says the U.S. is concerned about the possibility of a ballistic missile race in South

Asia.

Ali Abbas Rizvi, *Asian Defence Journal*, 4/95, p. 87 (5217).

5/31/95

Pakistani President Farooq Ahmad Khan Leghari says "Pakistan will do whatever is necessary for its security...Pakistan has the means to protest [protect] itself" against the Indian Prithvi and other missile systems which are threatening Pakistan. Leghari adds that while the Prithvi missile is "Pakistan specific," India's Agni missile will also target the Middle East, the Far East and China. Leghari also says that Pakistan has asked the U.S. to help dissuade India from producing the Prithvi and that Pakistan "want[s] a zero missile level in the region."

In response to the Indian missile program, Pakistan has decided to increase the effective range of its Hatf and Anza missile systems.

The Nation (Islamabad), 5/31/95, pp. 1, 3; in FBIS-NES-95-105, 5/31/95 (5197).

PAKISTAN WITH IRAN

5/3/95

Chief of the Awami Qiyat Party and former Pakistani Army Commander in Chief General Mirza Aslam Beg (ret.) states that the Pakistani government has cancelled 11 production agreements with Iran under U.S. pressure.

Khabrain (Islamabad), 5/5/95, p. 10; in FBIS-NES-95-090, 5/5/95 (5210).

PAKISTAN WITH IRAN AND PRC

6/95

A CIA report indicates that China has recently transferred missile components to Iran and Pakistan in possible violation of the MTCR. If a violation has occurred, the U.S. would be required to impose sanctions, say U.S. officials. The CIA report states that over the past 12 months China has delivered dozens, if not hundreds, of computerized machine tools and missile guidance systems, giving Iran the ability to increase its North Korean Scud missile accuracy and to build its own Scud-type missiles. Since

3/95, China is also believed to have transferred parts to Pakistan that could be used in M-11 missiles. A Chinese Foreign Ministry spokesman said China was abiding by its commitment to the MTCR and that the CIA report was "groundless."

Elaine Sciolino, *New York Times*, 6/22/95, pp. A1, A7 (5139).

PAKISTAN WITH IRAN AND RUSSIA

4/17/95

Two Russian scientists admit that they collaborated by electronic mail with Iran and Pakistan on nuclear- and missile-related issues. It is also reported that the DPRK attempted to entice over 100 Russian missile experts to work on upgrading Scud-C missiles.

Alan Cooperman and Kyrell Belianov, *US News & World Report*, 4/17/95, pp. 45, 48 (5253).

PAKISTAN WITH PRC AND UNITED STATES

6/22/95

Pakistan says that it has not received any shipments of M-11 missile components from China and that the U.S. has not produced any evidence to the contrary. Pakistan also denies that it has violated the MTCR.

Xinhua (Beijing), 6/22/95; in FBIS-CHI-95-121, 6/22/95 (5198).

PAKISTAN WITH SOUTH AFRICA

6/95

According to a U.S. government official, the South African company Kentron is trying to sell H-2 and H-3 air-launched standoff weapons to Pakistan. A number of U.S. government agencies say South Africa is developing standoff weapons, unmanned aerial vehicles and stealth detection technology for sale overseas. South African aerospace officials have only confirmed that they have flown "a second generation standoff weapon."

Paul Mann, *Aviation Week & Space Technology*, 6/26/95, p. 19 (5239).

PAKISTAN WITH UNITED STATES

4/28/95

The U.S. Department of State refuses to comment on allegations that a Pakistani army officer had been arrested for selling information on Pakistan's missile program to the U.S. The charge is considered to be politically sensitive for the Pakistani government because information passed to the U.S. could be given to Israel, which has an alleged working relationship with India's intelligence service.

DAWN (Karachi), 4/30/95, p. 20; in FBIS-NES-95-083, 4/30/95 (5211).

PEOPLE'S REPUBLIC OF CHINA

INTERNAL DEVELOPMENTS

2/95

China will deploy a second-generation ballistic missile submarine (SSBN) after 2000; a total of three SSBNs will be needed to maintain at least one on continuous patrol. China has one Xia class (Type 092) SSBN equipped with 12 CSS-N-3 single nuclear warhead ballistic missiles. The follow-on CSS-NX-4 currently under development will probably be MIRV capable.

Ian Kemp, *Jane's Intelligence Review*, 3/95, p. 1 (5011).

2/95

Western analysts report that China's official defense budget is lower than actual defense expenditure because official figures exclude, either partially or completely, areas such as research and development, procurement, arms sales, and non-military earnings. The U.S. Arms Control and Disarmament Agency (ACDA) estimates that the value of China's arms exports during the 1980s averaged \$1.5 billion each year. It is estimated that PLA procurement costs for domestically-built items, including nuclear

weapons, could vary from 25 billion yuan to over 50 billion yuan, including 870-2,610 million yuan for 1,000 to 3,000 missiles.

Richard A. Bitzinger, *International Defense Review*, 2/95; in *Strategic Digest*, 4/95, pp. 488-492 (5014).

3/95

China reveals the prototype of a gun similar to the Iraqi supergun designed by Gerald Bull, who may have designed this weapon for China. The gun, which has a calibre length of 258.82, may be the first in a series of super cannons designed either for incorporation into China's arsenal or for export.

Jane's Intelligence Review Pointer, 3/95, p. 5 (4995). *Statesman* (Calcutta); in *Asian Recorder*, 2/26/95-3/4/95, p. 24609 (4995).

3/95

Positional survival maneuvers conducted by the Second Artillery will increase the survivability of China's tactical missile units in the event of a nuclear war.

Li Guozheng, Zhang Jiajun, and Wu Xudong, *Jiefangjun Bao* (Beijing), 3/9/95, p. 3; in FBIS-CHI-95-079, 3/9/95 (5004).

3/14/95

The Chinese Air Force plans to equip its modern aircraft with nuclear-tipped air-to-surface cruise missiles and to develop a new SAM. It is also reported that the Chinese Navy will commission a SSBN with 16 missile launchers.

V. Stefashin, *Zarubezhnoye Voennoye Obobreniye* (Moscow), pp. 11-13; in JPRS-UMA-95-011, 3/14/95 (5018).

5/95

According to the Aerodynamics Research Center of the Commission of Science, Technology, and Industry for National Defense, China is Asia's largest aerodynamics research base, with advanced testing capabilities including 40 aeronautic and astronautic wind tunnels for testing guided missiles, carrier rockets, aircraft, and satellites.

Yu Zhengdao and Xi Qixin, *Xinhua* (Beijing), 5/25/95; in FBIS-CHI-95-107, 5/25/95 (4997).

5/17/95

China's underground nuclear test in 5/15/95 apparently confirms that the Chinese nuclear weapons program is focusing on the miniaturization of nuclear warheads for use

on tactical missiles.

Le Monde, 5/17/95 (5016). *Liberation*, 5/16/95 (5016).

5/29/95

China test-launches a mobile Dong Feng-31 ballistic missile in the Xinjiang region. The solid-fuel, three-stage missile can be fired from a special transporter which gives China a second-strike capability. The DF-31 also brings Europe within China's strike distance. In 11/94, *Jane's Strategic Weapons Systems* reported that the DF-31 has an 8,000 km range, a 250 kt payload and will be operational by 1996. Despite other reports to the contrary, *Jane's Defence Weekly* reports that the DF-31 is liquid-fueled. The DF-31 is said to mark a qualitative improvement over China's silo-based, liquid-fueled ICBMs and IRBMs. A warhead for the missile is expected to be ready by 1996. It is also reported that China has one Xia-class SSBN with 12 solid-fueled, two-stage CSS-N-3 SLBMs and one two-megaton warhead. China has at least 15 silo-based, liquid-fuel DF-4 and -5 ICBMs with 15,000 km ranges and 90 IRBMs in its arsenal. Defense analysts acknowledge the possibility that China may field the Dong Feng-31 on its nuclear submarines. Sources at the Japanese Defense Agency indicate that China is also developing a submarine-launched ballistic missile, the Julang 2, with similar capabilities. According to reports, China is working to miniaturize warheads for the Julang-2.

Tony Walker, *Financial Times*, 6/1/95, p. 14 (5019). *Jane's Defence Weekly*, 6/17/95, p. 11 (5003). Neville de Silva, *Hong Kong Standard* (Hong Kong), 6/3/96, p. 8; in FBIS-CHI-95-107, 6/3/95 (5089). *Sankei Shimbun* (Tokyo), 5/31/95, p. 1; in FBIS-CHI-95-105 (5147).

6/1/95

Chinese Foreign Ministry official Chen Jian says that he is "not aware" that a Chinese ICBM has been launched as reported by a Japanese newspaper. Chen also states that China has the right to develop its military for the purpose of self-defense and criticizes a reported U.S.-Russian plan to cooperate on theater ballistic missile defense.

Kyodo (Tokyo), 6/1/95; in FBIS-CHI-95-105, 6/1/95 (5054).

6/7/95

China has completed a joint drill of the indigenous Long March-3B and Long March-3C rockets at the Xichang Satellite Launching Center. The primary purpose of the rockets is to place satellites into "trans-earth synchronous orbit." In 1995, the Long March-3B will launch a communications satellite for an international communications enterprise. In late 1996 or early 1997, the rocket will also launch the Apstar-IIR for the Asia-Pacific Communications Satellite Corporation.

Nan Yan and Liu Linzhong, *Xinhua* (Beijing), 6/7/95; in FBIS-CHI-95-116, 6/7/95 (5013).

PRC WITH GERMANY

5/5/95

Vice-President of China Great Wall Industry Liu Zhixiong, and President of the Satellite Systems division of Daimler-Benz Peter Denker sign a contract to launch the Nahuel-1 satellite on China's Long March-3C rocket in 1997. The agreement brings to seven China's total number of outstanding launch contracts for GTO satellites.

Tim Furniss, *Flight International*, 5/17/95-5/23/95, p. 18 (4991).

PRC WITH IRAN

4/95

China helped Iran develop the Oghab (Eagle) missile and a Scud-B missile production line.

Pamela Pohling Brown, *Strategic Digest*, 4/95, pp. 493-494 (5012).

6/16/95

U.S. officials say China has cancelled a forthcoming meeting at which the U.S. had planned to address concerns that China might have transferred sensitive ballistic missile technology to Iran. According to U.S. sources, China might be providing Iran with materials, equipment, and know-how to produce medium-range ballistic missiles. A U.S. official explains that China's assistance to Iran might be in the realm of short-range rockets not covered by the MTCR. A *Defense News* article claims that the U.S.

has strong evidence that the Chinese transferred medium-range ballistic missile technology. A U.S. official refutes this, saying the *Defense News* story "goes beyond what our current information would support."

R. Jeffrey Smith, *Washington Post*, 6/17/95, p. A14 (5221).

6/20/95

Chinese Foreign Ministry spokesman Chen Jian denies a 6/19/95 *Defense News* report that China sold missile technology to Iran in contravention of the MTCR. An internal CIA report is said to detail the missile transfers.

Thomas Beal, UPI (Beijing); in Executive News Service, 6/20/95 (5251).

PRC WITH IRAN AND PAKISTAN

6/95

A CIA report indicates that China has recently transferred missile components to Iran and Pakistan in possible violation of the MTCR. If a violation has occurred, the U.S. would be required to impose sanctions, say U.S. officials. The CIA report states that over the past 12 months China has delivered dozens, if not hundreds, of computerized machine tools and missile guidance systems, giving Iran the ability to increase its North Korean Scud missile accuracy and to build its own Scud-type missiles. Since 3/95, China is also believed to have transferred parts to Pakistan that could be used in M-11 missiles. A Chinese Foreign Ministry spokesman said China was abiding by its commitment to the MTCR and that the CIA report was "groundless."

Elaine Sciolino, *New York Times*, 6/22/95, pp. A1, A7 (5139).

PRC WITH JAPAN

Spring 1995

Japan expresses concern about China's test of the Dong Feng-31 ICBM from a mobile missile launcher. Chairman of Japan's Defence Agency's Joint Staff Council General Tetsuya Nishimoto says he intends to press China to increase the transparency of its

nuclear and missile development programs.

Neville de Silva, *Hong Kong Standard* (Hong Kong), 6/3/96, p. 8; in FBIS-CHI-95-107, 6/3/95 (5089). *Sankei Shimbun* (Tokyo), 5/31/95, p. 1; in FBIS-CHI-95-105 (5147).

PRC WITH PAKISTAN AND UNITED STATES

6/22/95

Pakistan denies that it has received any M-11 missile components from China and says the U.S. has not produced any evidence to the contrary. Pakistan also denies it has violated the MTCR.

Xinhua (Beijing), 6/22/95; in FBIS-CHI-95-121, 6/22/95 (5198).

PRC WITH RUSSIA

4/95

Russia will provide China with appropriate technological assistance for its program to launch a manned space-vehicle by the year 2002.

Flight International, 4/19/95-4/25/95, p. 25 (5027).

5/95

Russian military officers are in China to maintain and provide training for China's S-300 SAMs.

Vladimir Skosyrev, *Izvestiya* (Moscow), 5/16/95, p. 3; in FBIS-SOV-95-094, 5/16/95 (5009).

PRC WITH TAIWAN

2/24/95

Taiwan's Chief of General Staff Jiu Ho-Chien says that China has moved its second artillery division from Jiangxi province to Fujian province in order to bring Taiwan into the coverage of its M-9 guided missiles.

UPI, 3/2/95; in Executive News Service, 3/2/95 (4996). *Jane's Defence Weekly*, 3/4/95, p. 4 (4996).

3/2/95

Chinese Foreign Ministry spokesman Shen Guofang denies that China has moved troops to the coast near Taiwan.

UPI, 3/2/95; in Executive News Service, 3/2/95 (4996). *Jane's Defence Weekly*, 3/4/95, p. 4 (4996).

3/7/95

Commander-in-Chief of the Taiwanese Army Lee Chen-lin announces a five-day military exercise close to the PRC but denies that it is in response to Beijing's 1/95 redeployment of M series surface-to-surface missiles from Jiangxi province to Fujian province. Lee speculates that the PRC's deployment of missiles close to Taiwan might only have been an exercise.

Yao Chu-chi, Reuter, 3/7/95; in Executive News Service, 3/7/95 (5127).

5/29/95

China tests its Dong Feng-31 ICBM. Unnamed Taiwanese defense officials say they are not concerned about the test; they also claim that the weapon's role is primarily as a nuclear deterrent and that because of its 8,000 km (5,000 mile) range, the Dong Feng-31's main targets would be the western U.S. and continental Europe. Taipei is said to be more concerned about the threat posed by the PRC's short-range M-class missiles which can target Taiwan directly.

Agence France Presse (Hong Kong), 6/1/95; in FBIS-CHI-95-105, 6/1/95 (5128).

PRC WITH UNITED ARAB EMIRATES

3/18/95

The UAE decides to acquire the Chinese HY-2 missile to fulfill its coastal defense requirement.

Jacques de Lestapis, *Jane's Defence Weekly*, 3/18/95, pp. 38-42 (5033).

PRC WITH UNITED STATES

1/30/95

China and the U.S. finalize a seven-year agreement on commercial space launches. Under the agreement China is authorized to conduct 11 international space launches to geo-synchronous orbit through 12/31/01, but can increase this number if market demand rises. China agrees to keep its launch prices comparable with similar services offered in the West.

Statesman (Calcutta) 2/26/95-3/4/95; in Asian Recorder (5007).

3/95

According to arms transfer specialist Kenneth Timmerman, the U.S. Commerce Department's 1994 approval of the Garret Engine Co.'s sale of gas turbine engines to China could help the Chinese improve their cruise missiles. According to Timmerman, the goods were approved for export despite a declared military end-use. The U.S. Commerce Department decided that the sale did not violate U.S. export control laws because the engines would be shipped without the Full Authority Digital Engine Control (FADEC) system and would therefore be "brainless." A subsequent deal between China and the U.K.'s Lucas Aerospace, in which digital engine controls for the K-8 jet trainer are to be transferred, clears the way for China to design its own long-range cruise missile based on the Garret engine. Timmerman first published his observations in the 3/95 issue of *The American Spectator*.

Security Affairs, 3/95-4/95, p. 4 (5140).

4/95

Chinese officials say their government will pay all claims stemming from the 1/26/95 failed launch of a Long March-2E rocket at the Xichang Satellite Launch Center. The rocket was due to place a Hughes HS 601 satellite, owned by the Hong Kong-based Asia-Pacific Telecommunications Co., into orbit. The failed launch was similar to a 12/92 failure which also involved a Long March-2E vehicle and has never been explained.

Peter B. de Selding, *Space News*, 4/3/95-4/9/95, p. 4 (5143).

4/17/95

Chinese Foreign Minister Qian Qichen and U.S. Secretary of State Warren Christopher agree to cooperate to further nuclear non-proliferation objectives. In talks on Sino-U.S. relations, Qian and Christopher also reaffirm their commitment to their "Joint Declaration on the Issue of the Proliferation of Guided Missiles" of 10/4/94, and agree to initiate specialist meetings on the control of missile technology. They also reiterate the importance of extending the NPT, express their support for the framework agreement between the U.S. and the

DPRK, and pledge to cooperate further in the peaceful use of nuclear energy in accordance with the Sino-U.S. nuclear cooperation agreement of 1985.

Gao Jian, Xinhua (Beijing), 4/18/95; in FBIS-CHI-95-075, 4/18/95 (4992).

5/95

During a Pentagon wargame intended to forecast future Chinese and U.S. military capabilities, the U.S. loses, due partly to new precision-guided, long-range cruise missiles that China is currently developing with technology from U.S. Allied Signal, Inc. China's production of more accurate long-range ballistic missiles and Han-class nuclear submarines is expected to lead to a marked shift in global power.

Al Santoli, *Washington Times*, 3/28/95, p. A17 (4993).

5/28/95

China's Foreign Ministry spokesman Shen Guofang announces that Beijing is to postpone consultations with the U.S. on the MTCR in response to the U.S. decision to allow Taiwan's President Lee Teng-hui to visit. Shen adds that China is also postponing the 6/95 visit of the Director of the U.S. Arms Control and Disarmament Agency and the 7/95 visit of the Deputy Assistant Secretary of State for Politico-Military Affairs.

Xinhua (Beijing), 5/28/95; in FBIS-CHI-95-103, 5/28/95 (4994). Steven Mufson, *International Herald Tribune*, 5/29/95 (5008). *Economist*, 6/3/95, p. 4 (5209).

PHILIPPINES

INTERNAL DEVELOPMENTS

5/95

Commander of the Philippine Navy Rear Admiral Pio P. Carranza outlines a 15-year, 137.2 billion peso modernization plan. Under the plan 70 new ships will be purchased, 15 of which will be equipped, in the first phase, with short-range surface-to-

surface missiles.

Manila Standard, 6/5/95, p. 2; in FBIS-EAS-95-109, 6/5/95 (5122).

POLAND

INTERNAL DEVELOPMENTS

4/28/95

The Polish Navy launches a new missile carrier, the "Orp Gorm." According to Lieutenant Janusz Walczak, this may be the last ship the navy buys before the turn of the century.

PAP (Warsaw), 4/28/95; in FBIS-EEU-95-085-A, 4/28/95 (5072).

5/95

Chief of Staff of the Polish Air Forces and Air Defense (WLOP) Brigadier General Henryk Pietrzak says that missile troops and aircraft are the principal components of Poland's air defense system. The PZR Neva missile, which successfully completed testing in 1994, will be modernized to reduce its launching and reloading time. The medium-range Volkov missile will be phased out. WLOP intends to acquire a mobile, medium-range missile that is resistant to jamming, similar to the U.S. Patriot or Russian S-300 missiles.

Jozef Gomolka, *Przegląd Wojsk Lotniczych I Obrony Powietrznej* (Warsaw), 3/95, No. 3, pp. I-X; in FBIS-EEU-95-099, 5/23/95 (5064).

POLAND WITH HUNGARY

4/28/95

Polish Prime Minister Jozef Olesky and National Defense Minister Zbigniew Okonski meet with Hungarian Defense Minister Gyorgy Keleti and agree to host exercises involving a Hungarian air defense missile unit later in 1995. Poland also raises the possibility of purchasing electronics from Hungary for use in its UAVs.

PAP (Warsaw), 4/28/95; in FBIS-EEU-95-085-A, 4/28/95 (5106).

RUSSIA

INTERNAL DEVELOPMENTS

1/95

An official with the Makeyev State Missile Center, Mr. Velichko, says that the Zyb and Volna SLBMs could be converted to launch "special rescue units." Velichko says that the Center is also "prepared to offer a series of Volna rockets on the [international launch] market," which would increase the frequency of experiments conducted in outer space. Velichko suggests that Russian SLBMs could also be used to defend earth against comets and asteroids.

Vladimir Gubarev, *Segodnya* (Moscow), 1/25/95, p. 9; in JPRS-TAC-95-001, 2/14/95, pp. 28-31 (5114).

2/95

Commander-in-Chief of Russia's Strategic Missile Forces (SMF) Colonel General Igor Sergeev says Russia's "gigantic nuclear missiles are not destroyed out of love for peace," but in order to get newer, more "promising," and more mobile missiles. Russia dismantled 32 SS-18s in 1993 and 36 in 1994, instead of the required 44 a year. A lack of funds for new equipment is apparently causing delays. In a separate interview, Sergeev says that the SMF have retained command and control over missiles in Russia, Belarus, Kazakhstan, and Ukraine. Sergeev says that Ukraine has returned 420 warheads to Russia and that Kazakhstan has returned 632, with 266 still to come. Russia plans to deploy Topol-M2 missiles in silos left vacant by decommissioned SS-18s. According to Sergeev, Russia has had to develop its own complete missile production cycle to compensate for the loss of 40 percent of its defense enterprises following the breakup of the Soviet Union.

S. Schellenberg and S. Hutchinson, *Tango* (Berlin), 2/9/95, pp. 39-40; in JPRS-TAC-95-001, 2/14/95 (5057). Gennadiy Miranovich and Aleksandr Dolinin, *Kraznaya Zvezda* (Moscow), 2/8/95, p. 2; in JPRS-TAC-95-001, 2/14/95 (5173).

2/28/95

Russian Prime Minister V. Chernomyrdin signs into law a statute requiring certification of all "enterprises and organizations which develop and/or produce arms military equipment and ammunition and their main components, completing articles and materials." Manufacturers must apply for the five-year certification. Among others, the requirement affects developers and producers of "missile-artillery armament and means of servicing and using them...[and p]roducts of special chemistry, including missile propellants, explosives, powders..." The primary purpose of the certification program is to protect the Russian defense sector and to prevent foreign persons or entities from gaining control of Russian arms industries through the stock market.

Rossiyskaya Gazeta (Moscow), 3/18/95, p. 4; in JPRS-UMA-95-016, 4/18/95 (5238).

3/95

Reports indicate that the Plesetsk Cosmodrome will supplant Baikonur as Russia's principal military space launch facility within two to four years.

Valentin Shishlevskly, *Asian Defence Journal*, 3/95, p. 97 (5118).

3/95

President Yeltsin expresses support for the Russian military's plan to convert a former missile complex in the Amur Region into a military space-launch base. The new 'Svobodny' Cosmodrome is expected to cost \$2 billion.

Valentin Shishlevskly, *Asian Defence Journal*, 3/95, p. 98 (5177).

3/95

Russia is reported to have commenced production on its new Smerch warhead, the 9M55K1 (or MOTIV). Fitted onto a standard Splav 300 mm rocket, the 9M55K1 is a five-munition warhead containing five 15 kg top-attack submunitions. The submunitions each have a two-spectrum infra-red seeker and, once ejected, descend by parachute. Russian officials say the warhead is being produced for the Russian army and for Kuwait, which has 27 Smerch systems on order.

Jane's Defence Weekly, 4/15/95, p.6 (5040).

3/28/95

The first launch of the five-stage, solid-fuel Start-2 space booster is aborted 10 minutes after lift-off from Russia's Plesetsk cosmodrome. The booster, which was carrying three satellites, exploded over the Sea of Okhotsk. Chief of the State Investigation Commission Yuriy Yashin says the abortive launch was a result of the premature shutdown of the fourth stage engine, which resulted in the failed activation of the fifth stage.

Pavel Felgengauer, *Segodnya* (Moscow), 3/30/95, p. 1; in FBIS-SOV-95-061, 3/30/95 (5179).

3/30/95

A 200-car train carrying ammunition and "missiles" explodes at an ammunition depot near the Chinese border village of Taly, southwest of Vladivostok. The cause of the explosion is unknown, but it has been reported that other such explosions have been used as cover for soldiers stealing weapons.

Richard Beeston, *Times* (London), 3/31/95 (5098).

4/95

Testing of the new Roket and development of the Angara and Rus are in progress in efforts to improve Russia's family of space launch vehicles and enable Russia to become more competitive in the international commercial launch market.

Itar-Tass (Moscow), 4/8/95; in FBIS-SOV-95-072, 4/8/95 (4985).

4/95

The head of the regional administration in Chelyabinsk Vadim Solovev says he hopes that a "serious discussion of the further development of the Russian nuclear missile complex" will take place during Russian Prime Minister Chernomyrdin's visit to the Makeyev State Missile Center.

Gennadiy Yezhov, Itar-Tass (Moscow), 4/26/95; in FBIS-Sov-95-081, 4/26/95 (5029).

4/95

Reports emerge regarding the new, extremely high-speed Shkval (Squall) unguided underwater missile. The missile allows targets little chance to perform avoidance maneuvers and could possibly carry a tactical nuclear warhead. An advisor at Russia's Institute of Defense Research Aton Surikov confirms Shkval's existence but says reports

are not significant because the missile has been in service for years.

John Downing and Peter Felstead, *Jane's Intelligence Review Pointer*, 5/95, pp. 1-2 (5129).

4/95

Deputy Director of the Federal Service of Russia for Currency and Export Control and Executive Secretary of the Russian Federal Commission for Export Control (Eksportkontrol) Rustam Safaraliyev [as published] says Russia "must play a much greater role in regulating exports of dual-use materials, equipment and technologies." Safaraliyev states this must be done in ways that optimally harmonize openness in Russia's economy and the needs of national security and compliance with international obligations regarding the nonproliferation of weapons of mass destruction." Safaraliyev adds that membership in international export control regimes is in Russia's national interest but only if such cooperation is based on equal partnership.

Rustam Safaraliyev, *Delovoy Mir* (Moscow), 4/29/95, p. 3; in FBIS-SOV-95-097-S, 4/29/95 (5186).

4/8/95

Managers at Russia's Votkinsk missile production facility say that the aborted Start rocket carrier exploded because its flight trajectory had been calculated incorrectly, which resulted in the failure of the fifth stage. The Start rocket is a five-stage SLV converted from a three-stage SS-25 Topol ICBM. Russia plans to replace seven of its aging strategic missiles with the solid-fuel, silo-based Topol by the end of the century. Votkinsk is also developing a mobile-based variant of the Topol missile.

Vladimir Polozhentshev, Russian Public Television First Channel Network (Moscow), 4/8/95; in FBIS-SOV-95-077, 4/8/95 (5023).

4/11/95

Russian Defense Minister General Pavel Grachev visits a SMF unit in Irkutsk. Grachev emphasizes that the SMF continues to play a lead role in stabilizing the global political situation. Preparations and training are underway to ensure that testing of the Topol-M (SS-25) ICBM can be carried out as early as 5/95 from the Kapustin Yar test facility.

Krasnaya Zvezda (Moscow), 4/13/95, p. 1; in FBIS-SOV-95-071, 4/13/95 (4987).

4/18/95

Chairman of Russia's State Committee on the Defense Industry Viktor Glukikh states that an increase in armaments and military hardware exports is needed to save Russia's ailing arms industry. Glukikh cites Russia's sale of S-300B missile systems to the U.S. as an example of how money from arms sales can facilitate an improvement in the production effectiveness of a Russian arms enterprise.

Interfax (Moscow), 4/18/95; in FBIS-SOV-95-077, 4/18/95 (5022).

5/95

First Deputy Commander in Chief of the SMF Colonel General Nikolay Solovtsov says that the SMF currently accounts for two-thirds of Russia's strategic nuclear delivery vehicles.

Tamara Semenova, *Rossiyskiye Vesti* (Moscow), 5/20/95, p. 3; in FBIS-SOV-95-099, 5/20/95 (5172).

5/95

The Russian Army will be equipped with a new eight-axle MAZ-79-221 TEL to transport and launch strategic missiles. The new TEL has the turning radius of a normal truck because each axle is steered independently.

Aleksandr Ilin, Russian Public Television First Channel Network (Moscow), 5/28/95; in FBIS-SOV-95-105, 5/28/95 (5021).

5/30/95

Major-General Yuriy Kononov, commander of the SMF's Taman Division, says gas and power suppliers to the Saratov region missile facility threatened to cut off power if the division did not pay its energy debt of 400 million rubles. The threats were made during a visit of an U.S. START I inspection team. Although the threat was not fulfilled, power had been cut off to the Central Command Post of the SMF in the fall of 1994. Head of the Main Staff of the Strategic Missile Troops Colonel General Viktor Yesin says the debt for electricity is currently 1.879 billion rubles and continues to grow.

Anatoliy Yurkin, Itar-Tass (Moscow), 5/30/95; in FBIS-SOV-95-104, 5/30/95 (5187).

6/95

The Khrunichev State Research and Production Center displays the design for its new

heavy Angara booster. The Angara has liquid oxygen tanks installed outside of each propulsion section and will be more powerful than a Proton booster. The Angara booster should be launched in 2000. The new booster's design will allow flexibility in configuration by mixing equipment. Angara will be launched from the Plesetsk launch site, which will reduce Russia's dependence on the Baikonur Cosmodrome in Kazakhstan. Russia also displays the two-stage, liquid-fueled Borurlak booster, which was mounted under a Tupolev Tu-160 Black-jack bomber. The Borurlak is being designed by the Raduga (Rainbow) Military design Bureau.

Craig Covault, *Aviation Week & Space Technology*, 6/19/95, pp. 26-27 (5059).

6/8/95

Russian military space forces successfully test-launch an 18-year-old SS-18 ICBM from the Baikonur Cosmodrome. The missile lands in the Kamchatka testing range.

Itar-Tass (Moscow), 6/8/95; in FBIS-SOV-95-11, 6/8/95 (4981).

RUSSIA WITH AUSTRALIA

4/95

The Russian enterprise STC Complex and the Australian Space Office initiate a study into the feasibility of launching Russia's Start SLV from Australia, taking into account Moscow's MTCR obligations. The study is expected to be complete by the third quarter of 1995. Russia could begin shipping rockets to Australia in 1997.

Warren Ferster, *Defense News*, 4/24/95-4/30/95, p. 29 (4982). Warren Ferster, *Space News*, 4/24/95-4/30/95, p. 24 (5062).

RUSSIA WITH BELARUS

5/26/95

The head of Russia's Strategic Missile Troops Staff, Colonel-General Viktor Yesin, says 18 ICBMs remaining in Belarus will be transferred to Russia by the end of 1995. Yesin states that Russia maintains operational control over the missiles.

Doug Clarke, *Omri Daily Digest*, 5/29/95 (5041).

Interfax (Moscow), 5/26/95; in FBIS-SOV-95-103, 5/26/95 (5117).

RUSSIA WITH BRAZIL AND UNITED STATES

5/95

The Clinton administration determines that Russia recently transferred advanced missile technology to Brazil but indicates in a secret memo to Congress that it will waive sanctions. According to a Clinton administration official, the decision to waive sanctions over the sale of carbon fiber, which is used in building rocket motor cases, comes after a Russian promise to stop sales to Brazil. A Brazilian official says that Brazil's 2/94 [as published] promise to adhere to MTCR guidelines applies only to the sale and not to the purchase of missile technology. U.S. officials say the decision to waive sanctions is part of an effort to encourage Brazil to become a full MTCR member. Other U.S. officials are quoted as saying the waiver could trigger instability in South America, prompting Argentina to renew its Condor program. A Washington-based non-proliferation expert says the lack of commercial demand for Argentine and Brazilian space launch vehicles may lead to an increased risk of the technology being transferred to ballistic missile programs.

R. Jeffrey Smith, *Washington Post*, 6/8/95, pp. A23, A27 (5146). Warren Ferster, *Space News*, 6/12/95-6/18/95, p. 12 (5234).

RUSSIA WITH BULGARIA AND UKRAINE

6/95

The Bulgarian Ministry of Defense buys ST-68 radars from Ukraine after being told, incorrectly, that they were compatible with Bulgaria's new Russian S-300 PMU air defense missile system. When the radars fail to work with the missile system, Bulgaria is forced to replace them with alternative models from Russia.

Aleksandr Sychev, *Izvestiya* (Moscow), 6/6/95, p. 3; in JPRS-UMA-95-025, 6/6/95 (5104).

RUSSIA WITH CROATIA

5/95

Croatia has acquired Russian S-300 SAMs for medium and high altitude defense.

Zoran Lukic and Nik Kotej, *Telegraf* (Belgrade), 5/24/95, pp. 41-43; in FBIS-EEU-95-106, 5/24/95 (5068).

RUSSIA WITH GERMANY

6/95

Russia's Khrunichev State Research and Production Center and Germany's Daimler Benz (DASA) initiate the 'Rockot' project, which will use an SS-19 ICBM attached to a new 'Breeze' upper stage to boost 1,800 kg payloads into low/medium earth orbits. Financed by an innovative debt refinancing package, the project seeks to begin launching from Plesetsk in 1997.

Craig Covault, *Aviation Week & Space Technology*, 6/19/95, pp. 26-27 (5059).

RUSSIA WITH HUNGARY

5/95

Russia begins talks with the Hungarian Defense Ministry to determine the weapons that Hungary will purchase to reduce its \$300 million debt. Hungarian Defense Ministry spokesman Lajo Erdelyi says Hungary would like to purchase "long-range missile launchers."

Attila Lenart, *Nepszava* (Budapest), 4/27/95, p.3; in FBIS-EEU-95-082, 4/27/95 (5083). *Nepszabadsag* (Budapest), 6/27/95, p. 1; in FBIS-EEU-95-124, 6/27/95 (5136).

RUSSIA WITH INDIA

3/22/95

India announces an agreement with Russia to purchase 12 2S6M Tunguska air defense systems, including eight SA-19 missiles. The final contract price will be set in mid-4/95 at a meeting in Moscow.

Armed Forces Newswire Service, 3/23/95 (4980). Atul Aneja, *Hindu*, 4/1/95, p.2 (5121). Russian Television Network (Moscow), 4/17/95; in FBIS-SOV-95-074, 4/17/95 (5178). *International Defence Review*, 5/95, p. 14 (5203).

3/6/95

ISRO chairman Krishnaswamy Kasturirangan states that GSLV flights will begin by early 1998 and that the first seven flights will be powered by Russian cryogenic engines. Under a renegotiated contract, Russia will now provide India with seven cryogenic engines instead of four. India is attempting to develop an indigenous cryogenic engine production capability for future flights of the GSLV.

Space News, 3/13/95-3/19/95, p. 2 (5032). *Space News*, 4/17/95-4/23/95, p. 16 (5032).

4/21/95

Russian officials announce that Russia will supply India with nine cryogenic rocket boosters for its three-stage GSLV by the year 2000. The first booster is slated for delivery by the end of 1996, with subsequent boosters to be delivered every six months thereafter. India's acquisition of the boosters will make it one of five nations capable of launching commercial payloads into geostationary orbit.

Interfax (Moscow), 4/21/95; in FBIS-SOV-95-079, 4/21/95 (5160).

6/95

The Indian Defense Ministry and Russian manufacturer Mikoyan attempt to conclude a contract for the upgrade of 125 of India's MiGBis [as reported]. The upgrade would fit the aircraft with a weapons and avionics package similar to that of the MiG-21-93, possibly including the Raduga Kh-31 (AS-17 Krypton) air-to-surface missile.

Alexander Velovich, *Flight International*, 6/95, p. 22 (5153).

RUSSIA WITH IRAN

4/95

Russian officials decline to comment on the possible sale of an "ultrasophisticated" submarine to Iran. Western military analysts claim the submarine is equipped with the Igla anti-aircraft missile system.

Stanislav Kucher and Dmitriy Kulik, *Komsomolskaya Pravda* (Moscow), 4/29/95, p. 3; in FBIS-SOV-95-083, 4/29/95 (5113).

5/95

According to a Russian analyst, Russia's need for hard currency makes an arms deal with Iran probable despite a potentially adverse U.S. reaction. The deal may include S-300-PMU-1 SAM systems, Tunguska anti-aircraft systems, and project-12318 missile launchers.

Igor Korotchenko, *Nezavisimaya Gazeta* (Moscow), 5/12/95, p. 2 (5071).

RUSSIA WITH IRAN AND PAKISTAN

4/17/95

Two Russian scientists admit that they collaborated by electronic mail with Iran and Pakistan on nuclear and missile related issues. It is also reported that the DPRK attempted to entice more than 100 Russian missile experts to work on upgrading Scud-C missiles.

Alan Cooperman and Kyrell Belianov, *US News & World Report*, 4/17/95, pp. 45, 48 (5253).

RUSSIA WITH KAZAKHSTAN

4/95

Kazakhstan begins decommissioning missile silos that once housed Soviet SS-18 ICBMs. Destruction of the silos will be completed by Russia's Strategic Missile Forces, in accordance with a bilateral agreement between Kazakhstan and Russia.

Fedor Ignatov, *Itar-Tass* (Moscow), 4/24/95; in FBIS-SOV-95-078, 4/24/95 (5167).

4/24/95

The Russian Strategic Missile Forces' press center announces that the withdrawal of 104 Russian SS-18 ICBMs from Kazakhstan to Russia is complete. The missile withdrawal is in accordance with Kazakhstan's agreement to eliminate nuclear missiles from its territory following the breakup of the Soviet Union.

NTV (Moscow), 4/25/95; in FBIS-SOV-95-091, 4/25/95 (5025). Doug Clarke, *Omri Daily Digest*, 5/29/95 (5041). Interfax (Moscow), 5/26/95; in FBIS-SOV-95-103, 5/26/95 (5117).

5/95

Kazakhstan Defense Minister Army General Sagadat Nurmagambetov observes the destruction of an ICBM silo on a visit to a regiment of the Russian Strategic Missile Forces in Derzhanvinsk, north Kazakhstan. According to the terms of the START I Treaty, the division is dismantling its launch site prior to being deactivated.

Anatoliy Ladin, *Krasnaya Zvezda* (Moscow), 5/19/95, p. 1; in FBIS-SOV-95-098, 5/19/95 (5105).

RUSSIA WITH KUWAIT

3/95

Russia is reported to have commenced production on its new Smerch warhead, the 9M55K1 (or MOTIV). Fitted onto a standard Splav 300 mm rocket, the 9M55K1 is a five-munition warhead containing five 15 kg top-attack submunitions. The submunitions each have a two-spectrum infra-red seeker and, once ejected, descend by parachute. Russian officials say the warhead is being produced for the Russian army and for Kuwait, which has 27 Smerch systems on order.

Jane's Defence Weekly, 4/15/95, p.6 (5040).

RUSSIA WITH KUWAIT AND UNITED ARAB EMIRATES

4/95

The UAE and Kuwait are interested in buying an unspecified number of Russian S-300 'Grumble' systems.

Charles Bickers, *Jane's Defence System*, 4/8/95 (5112).

RUSSIA WITH MULTI-COUNTRY GROUP

6/95

Energomash, Chemical Automation Design Bureau (CADB) and the Russian Space Agency team up with *Societe Europeenne de Propulsion*, a multinational aerospace consortium working on Ariane 4/5 propulsion, to test-fire two advanced Russian cryogenic RD-0120 rocket engines. The project is intended to help Russian managers and

engineers work more effectively with Western organizations.

Aviation Week and Space Technology, 6/26/95, p. 20 (5120).

RUSSIA WITH PRC

5/95

Russian military officers are in China to maintain and provide training for China's S-300 SAMs.

Vladimir Skosyrev, *Izvestiya* (Moscow), 5/16/95, p. 3; in FBIS-SOV-95-094, 5/16/95 (5009).

RUSSIA WITH SOUTH AFRICA

4/95

The head of Russian presidential security, General Korzhakov, criticizes the lack of controls over Russian arms exports in a confidential report to President Boris Yeltsin. The report states that Russian aerospace companies have attempted to sell versions of the RD33 engine and R739 air-to-air missiles to South Africa "under the protection of senior government officials."

Le Figaro (Paris), 4/7/95, p. 3; in FBIS-SOV-95-068, 4/7/95 (4984).

RUSSIA WITH SOUTH KOREA AND UNITED STATES

5/95

South Korea is reported to remain interested in acquiring unspecified Russian weapon systems, despite being pressured by the U.S. to buy Patriot as opposed to Russian S-300 missile systems.

Aleksandr Koretskiy, *Kommersant Daily* (Moscow), 5/16/95, p. 3; in FBIS-SOV-95-094, 5/16/95 (5124).

RUSSIA WITH UKRAINE

3/95

In 1994, Ukraine removed approximately 700 nuclear warheads from SS-24 and SS-19 ICBMs belonging to the 46th Missile Division at Pervomaysk and transported 360 warheads to Russia.

Robert S. Norris and William M. Arkin, *Bulletin of the Atomic Scientists*, 3/95-4/95, pp. 78-79 (5079).

5/26/95

Head of Russia's Strategic Missile Troops Colonel General Viktor Yesin says that Russia maintains "operational control" of 93 ICBMs in Ukraine. Yesin says the warheads on the Ukrainian missiles will be destroyed by 6/96.

Doug Clarke, *Omri Daily Digest*, 5/29/95 (5041). Interfax (Moscow), 5/26/95; in FBIS-SOV-95-103, 5/26/95 (5117).

RUSSIA WITH UNITED ARAB EMIRATES AND UNITED STATES

4/95

Russia offers the UAE three S-300V (SA-10/12) air defense systems in exchange for cancellation of \$500 million in debt. General Director of the Russian Arms Export Agency Rosvoorouzhnie Alexander Kotelkin believes, on a technical basis alone, the Russian proposal will beat Raytheon's counter-offer. Emphasizing their interoperability with a GCC-wide air defense network, Raytheon is offering 10 Patriot launchers for \$1 billion.

Jane's Defence Weekly, 4/1/95, p. 10 (5052).

4/25/95

UAE Military Chief of Staff Muhammad bin-Zayid al-Nuhayyan enters negotiations with top Russian officials regarding possible acquisition of missile and land-based air defense systems. It is speculated that the Soviet and Russian practice of selling obsolete Warsaw Pact weaponry to Abu Dhabi as "new" equipment is also discussed.

NTV (Moscow), 4/25/95; in FBIS-SOV-95-080, 4/25/95 (5204).

RUSSIA WITH UNITED KINGDOM

4/95

The head of Russian presidential security, General Korzhakov, criticizes the lack of controls over Russian arms exports in a confidential report to President Boris Yeltsin. The report says that Volentech allegedly sold TOUNGOUZ rocket launchers to the British secret service.

Le Figaro (Paris), 4/7/95, p. 3; in FBIS-SOV-95-068, 4/7/95 (4984).

RUSSIA WITH UNITED STATES

3/95

In 4/95 or 5/95, Aerojet of Sacramento, CA, intends to import two Russian liquid-fueled NK-33 rocket engines for testing, prior to offering them as replacements for U.S. rockets.

Susan Dowd, *Space News*, 3/6/95-3/12/95, p. 2 (5070).

3/95

Logistical and financial problems are reported to plague the implementation of START verification activities. Apart from the difficulties experienced in transporting and accommodating U.S. inspection teams and their Russian escorts to sites throughout Russia, treaty-required recordings of telemetric data from SLBM launches have been impossible to obtain because Russia cannot repair its recording instruments. Some experts believe START implementation may require billions, possibly trillions of rubles. Although intended to help reduce Russia's strategic missiles, Nunn-Lugar funding does not give the Russians what they really want, "equipment for the hydraulic removal of solid fuel charges of the rockets being eliminated."

Gennadiy Obolenskiy, *Krasnaya Zvezda* (Moscow), 3/23/95, p. 3; in FBIS-SOV-95-062, 3/23/95 (5168).

3/3/95

U.S. missile inspectors conduct their first surprise inspection of Russian missile facilities under the START I agreement. According to a U.S. embassy spokesman, one of the three teams visited Kostroma to inspect a SS-24 ICBM site. Although the location of the other two inspection teams was not given, the U.S. spokesman says that all 55 Russian missile sites will be inspected in the next 120 days. Russian inspectors will arrive in the U.S. on 3/4/95.

Reuter, 3/3/95; in Executive News Service, 3/3/95 (5242).

4/95

U.S. officials announce that they are con-

sidering Russia's request to renegotiate the Russian-U.S. space-launch accord reached in 9/93. The request follows a 1/27/95 deal between the U.S. and China which gave Beijing more freedom than Moscow in determining the price and quantity of its western payload launches.

Space News, 4/17/95-4/23/95, p. 16 (4988).

4/95

The U.S. is developing a Mach 3 Harpoon-2 missile to defeat anti-missile defenses, and has bought a Russian target derivative of the supersonic Zvezda Kh-31A for anti-ship missile simulation tests.

Stewart Walters, *Asian Defense Journal*, 4/95, pp. 37-40 (5056).

4/95

During the 1995 IDEX exhibition in Abu Dhabi, Russian officials say they would be interested in selling the S-300 'Grumble' system to the U.S., but only if several batteries were included in such a deal.

Charles Bickers, *Jane's Defence Weekly*, 4/8/95, p. 12 (5112).

4/14/95

A spokesman from Rosvooruzheniye announces that Russia will sell a mobile S-300 V SAM system to the U.S. for \$60 million.

Marcus Warren, *The Daily Telegraph*, 4/15/95 (5069). Christopher Foss and Barbara Starr, *Jane's Defence Weekly*, 4/29/95 (5085)

5/95

Russia's Zvezda design bureau joins the U.S.'s McDonnell Douglas Aerospace to supply the U.S. Navy with four Russian M-31 ramjet-powered, supersonic, sea-skimming aerial target vehicles for FY 1995-96. The U.S. Navy will use the M-31s to simulate anti-ship cruise missile threats. If tests are successful, as many as three to 20 additional M-31s could be supplied in FY 1997.

Flight International, 5/24/95-5/30/95, p. 26 (5020).

5/95

The U.S. and Russia will hold a series of joint missile defense exercises commencing with command post exercises in 1996 and 1997, and culminating with a field exercise in Russia in 1997. The field exercise will involve U.S. Patriot Advance Capability

(PAC-2) and Russian SV-300 missiles. The exercises could cost up to \$5 million.

Robert Holzer, *Defense News*, 5/8/95-5/14/95, p. 12 (5058). Christopher Bellamy, *The Independent*, 5/23/95 (5058).

5/95

Thiokol is awarded a U.S. Defense Nuclear Agency contract to convert liquid propellant from Russian ICBMs into chemicals suitable for commercial applications. Thiokol will provide the Russian government with the equipment, materials, training, and support necessary for the environmentally sound disposal of unsymmetrical dimethyl hydrazine (UDMH) liquid rocket propellant. Two U.S. companies and the Russian stock company, Askond, will also participate.

Jane's Defence Contracts, 5/95, p. 12 (5115).

5/95

Russian-made rocket engines are offered for competition in a U.S. contract to upgrade expendable launch vehicles. The two engines are the liquid-fueled RD-180 developed by NPO Energomash and the NK-33 developed by the Samara State Scientific and Production Enterprise.

Warren Ferster, *Space News*, 5/8/95-5/14/95, p. 12 (5116).

5/10/95

U.S. President Bill Clinton and Russian President Boris Yeltsin agree on a joint statement of principles on the development of "tactical" ABM systems. It is reported that because Russia's Start-2 satellite launch rocket ditched into the ocean after following a ballistic trajectory on 3/29/95, the U.S. Department of Defense has decided that all future Start rockets will be included under the START I agreement's quota of carrier rockets.

Pavel Felgengauer, *Segodnya* (Moscow), 5/11/95, p. 1; in FBIS-SOV-95-091, 5/11/95 (5026).

5/15/95

A U.S. Congress Office of Technology Assessment report recommends caution to U.S. companies and government agencies wanting to form joint enterprises with Russian partners. The report says that continued Russian adherence to MTCR guidelines should be an important consideration in any

cooperation with Russia.

Ben Ionnatta, *Space News*, 5/22/95-5/28/95, p. 17 (5166).

6/95

Russia's Krunichev and NPO Energia form a joint venture with U.S. Lockheed Martin to merge the launcher capabilities of the Atlas and Proton SLVs. The first commercial Proton launch is scheduled for 3/96.

Flight International, 6/21/95-6/27/95, p. 27 (5166).

6/95

Between 6/29/95-6/30/95, Russian Prime Minister Chernomyrdin and U.S. Vice President Gore discuss Russia's future official membership in the MTCR.

Aleksandr Kudakayev, *Segodnya* (Moscow), 6/27/95, p. 2; in FBIS-SOV-95-123, 6/27/95 (5170).

SOUTH AFRICA

INTERNAL DEVELOPMENTS

4/95

South African missile manufacturer Kentron begins to test fire its ramjet-powered SAHV SAM for an unnamed foreign buyer. The ramjet would increase the range of this imaging, infra-red seeker-equipped missile to more than 30 KM (16 nm).

Flight International, 4/5/95-4/11/95, p. 20 (5094).

SOUTH AFRICA WITH PAKISTAN

6/95

According to a U.S. government official, the South African company Kentron is trying to sell H-2 and H-3 air-launched standoff weapons to Pakistan. A number of U.S. government agencies say South Africa is developing standoff weapons, unmanned aerial vehicles, and stealth detection technology for sale overseas. South African aerospace officials have only confirmed that they have flown "a second generation standoff weapon."

Paul Mann, *Aviation Week & Space Technology*, 6/26/95, p. 19 (5239).

SOUTH AFRICA WITH RUSSIA

4/95

The head of Russian presidential security, General Korzhakov, criticizes the lack of controls over Russian arms exports in a confidential report to President Boris Yeltsin. The report says that Russian aerospace companies have attempted to sell versions of the RD33 engine and R739 air-to-air missiles to South Africa "under the protection of senior government officials."

Le Figaro (Paris), 4/7/95, p. 3; in FBIS-SOV-95-068, 4/7/95 (4984).

SOUTH AFRICA WITH SPAIN AND UNITED KINGDOM

4/95

South Africa intends to introduce four new corvettes into service by 1991, if Parliament releases the necessary funds. The ships may be built either at Spain's Bazan or the U.K.'s Yarrow Shipyards, and will be equipped with eight Scorpion SSMs, torpedoes, and a medium helicopter. A SAM system is also under development for use on the ships.

Ian Kemp, *Jane's Defence Weekly*, 4/29/95, p. 34 (5096).

SOUTH AFRICA WITH UNITED KINGDOM

6/95

Speaking at the Le Bourget Paris Air Show, Kentron officials say they will offer their ramjet technology to meet the U.K.'s SR(A)1239 future medium-range air-to-air missile requirement.

Jane's Defence Weekly, 6/17/95, p. 5 (5246).

SOUTH KOREA

INTERNAL DEVELOPMENTS

3/28/95

A South Korean military source announces the successful test launch of the short-range 'Chonma' SAM. 140 Chonma missiles are expected to be deployed from 1998. The 30 km-range 'Chonma' is manufactured almost completely from components produced indigenously in South Korea, although its guidance system was provided by foreign contractors.

Yonhap (Seoul), 3/28/95; in FBIS-EAS-95-059, 3/28/95 (5108). Reuter, 3/8/95 (5108).

SOUTH KOREA WITH RUSSIA AND UNITED STATES

5/95

South Korea is reported to remain interested in unspecified Russian weapon systems despite pressure from the U.S. to buy Patriot rather than Russian S-300 missile systems.

Aleksandr Koretskiy, *Kommersant Daily* (Moscow), 5/16/95, p. 3; in FBIS-SOV-95-094, 5/16/95 (5124).

SOUTH KOREA AND UNITED STATES

3/95

South Korea awards a \$5 million contract to AAI of Hunt Valley, Maryland, to jointly produce two prototype unmanned aerial vehicle (UAV) systems with Daewoo Corporation. The UAVs are expected to be used in spy missions over North Korean military facilities, including multiple launch rocket sites.

Barbara Opall, *Defense News*, 3/20/95-3/26/95, p. 36 (5107).

4/95

South Korea imported 48 Patriot missile launching ramps and 192 warheads from the U.S. in 1994. The missiles are deployed "at front areas along the Military Demarcation

Line.”

Korean Central Broadcasting Network (Pyongyang), 4/7/95; in FBIS-EAS-95-069, 4/7/95 (5109).

SUDAN

SUDAN WITH EGYPT AND IRAQ

4/95

In early 1/91, the Sudanese government reportedly received missile systems from Iraq and targeted them against sites in Egypt, including the Aswan High Dam. Sudan was allied with Iraq during the Gulf War of 1991.

Aleksandr Ivanov, *Nezavisimaya Gazeta* (Moscow), 4/18/95, p. 2; in FBIS-SOV-95-079, 4/18/95 (5205).

SWEDEN

SWEDEN WITH UNITED ARAB EMIRATES AND UNITED STATES

3/18/95

The UAE is considering acquisition of the U.S./Swedish Hellfire coastal defense system.

Jacques de Lestapis, *Jane's Defence Weekly*, 3/18/95, pp. 38-42 (5033).

SYRIA

INTERNAL DEVELOPMENTS

3/95

According to a senior Israeli Army officer, most of the 1,000 ballistic missiles targeted

at Israel are Syrian. The remainder belong to Egypt, Iran, and Libya. It is predicted that this number could double over the next decade.

Agence France Presse International News, 3/12/95; in DFAX Summaries, 3/14/95 (4965).

5/95

Dr. Dani Shoham, a researcher at the Center for Strategic Studies at Bar Ilan University, claims that Syria's production and stockpile of chemical weapons eclipses that of any other country in the Middle East. Shoham says that Syria has between 100-200 chemical warheads for its Scud-B and Scud-C missiles and may be involved with Iran, North Korea, and China in producing chemical warheads for the M-9 missile. Syria has apparently improved its inventory of delivery systems to include surface-to-surface missiles with ranges of 300, 500, and 1,000 km.

Gay Bekhor, *Ha'aretz* (Tel Aviv), 5/26/95, p. A3 (5152).

6/95

Syria is reported to have 62 launchers and hundreds of surface-to-surface missiles.

Qobi Marenko, Channel 2 Television Network (Jerusalem), 6/21/95 (5131).

TAIWAN

INTERNAL DEVELOPMENTS

5/12/95

As part of its annual "Shen Chien 35" exercise, the Taiwanese Army test fires a newly modified Hawk anti-aircraft missile, successfully hitting one target. A second launch is aborted.

Lien-Ho Pao (Taipei), 5/13/95, p.2; in FBIS-CHI-95-099, 5/13/95 (5080).

TAIWAN WITH FRANCE

4/18/95

Commander-in-Chief of the Taiwanese Navy Ku Chung-Lien says that the first of six Lafayette-class missile frigates will be delivered by France in 8/95 or 9/95 and will be re-identified as the Kang Ting-class frigate.

CNA (Taipei), 4/18/95; in FBIS-CHI-95-075, 4/18/95 (4961). Benjamin Yeh, CNA (Taipei), 6/3/95; in FBIS-CHI-95-107, 6/3/95 (5125).

TAIWAN WITH PRC

2/24/95

Taiwan's Chief of General Staff Jiu Ho-Chien says that China has moved its second artillery division from Jiangxi province to Fujian province in order to bring Taiwan into coverage of its M-9 guided missiles.

UPI, 3/2/95; in Executive News Service, 3/2/95 (4996). *Jane's Defence Weekly*, 3/4/95, p. 4 (4996).

3/2/95

Chinese Foreign Ministry spokesman Shen Guofang denies that China has moved troops to the coast near Taiwan.

UPI, 3/2/95; in Executive News Service, 3/2/95 (4996). *Jane's Defence Weekly*, 3/4/95, p. 4 (4996).

3/7/95

Commander-in-Chief of the Taiwanese Army Lee Chen-lin announces a five-day military exercise close to the PRC but denies that it is in response to Beijing's 1/95 redeployment of M series surface-to-surface missiles from Jiangxi province to Fujian province. Lee speculates that the PRC's deployment of missiles close to Taiwan might only have been an exercise.

Yao Chu-chi, Reuter, 3/7/95; in Executive News Service, 3/7/95 (5127).

5/29/95

China tests its Dong Feng-31 ICBM over a range of 2,000 km (1,250 miles). Unnamed Taiwanese defense officials say they are not concerned about the test and claim that the weapon's role is primarily as a nuclear deterrent and that because of its 8,000 km (5,000 mile) range, the Dong Feng-31's main targets would be the western U.S. and

continental Europe. Taipei is said to be more concerned about the threat posed by the PRC's short-range M-class missiles which can target Taiwan directly.

Agence France Presse (Hong Kong), 6/1/95; in FBIS-CHI-95-105, 6/1/95 (5128).

TAIWAN WITH UNITED STATES

5/12/95

Deputy Commander-in-Chief of the Taiwanese Army Lieutenant General Chang Kuang-chin says that three batteries of the most recent variant of the Patriot missile ordered from Raytheon in 6/94 will be delivered in 7/97. Chang says preliminary testing of the Tienkung-2 (Skybow) and the updated version of the indigenously developed Tienkung-1 medium-range SAM have been completed.

Benjamin Yeh, CNA (Taipei), 5/13/95; in FBIS-CHI-95-093, 5/13/95 (5080). *Flight International*, 4/26/95-5/2/95, p. 16, (5134).

THAILAND

INTERNAL DEVELOPMENTS

3/95

As part of a readiness demonstration, the Thai Navy launches a C-801 guided missile from its Chinese-built Chao Phraya-class frigate, HMS Kra Buri, successfully destroying its target.

Siam Rat (Bangkok), 4/1/95, p. 3; in FBIS-EAS-95-063, 4/1/95 (5086).

TURKEY

TURKEY WITH UNITED STATES

4/95

The U.S. Department of Defense notifies Congress that Turkey will purchase 16 McDonnell Douglas Harpoon anti-ship missiles for \$28 million.

Jane's Defence Weekly, 4/8/95, p. 4 (4960). *Flight International*, 4/5/95-4/11/95, p. 22 (4960).

UKRAINE

INTERNAL DEVELOPMENTS

1/26/95

The Ukrainian Ministry of Defense says that destruction of ICBM silos will commence this summer. Ukrainian Defense Minister Valeriy Sharov prefers to dismantle the silo structure and fill the lower section with concrete, rather than exploding the silo complex.

Uniar (Kiev), 1/26/95; in JPRS-TAC-95-001, 2/14/95, p. 49 (5038).

5/95

The Mykolayiv Shipbuilding Research and Design Center in Ukraine begins preliminary design work on a Black Sea-based rocket launching facility. Converted solid-fuel SS-24 ICBMs are being considered for use as carrier rockets aboard the floating launch pad. Mykolayiv Chief Designer Serhiy Kryvko says launches could begin in 1998.

Anatoliy Khorunzhyy and Taras Smakula, *Post-Postup* (Lvov), 5/12/95-5/18/95, p. 3; in FBIS-SOV-95-099, 5/23/95 (5159).

6/95

The deputy chief engineer of Ukraine's missile test facility at the Southern Machine

Building plant in Dnepropetrovsk says security is lax due to a lack of funds. Speaking about the recent theft of 420 gilded jacks from the facility's missile testing equipment, Valentin Kravchenko says "thefts in the sections are committed almost every day."

Interfax (Moscow), 6/21/95; in FBIS-SOV-95-120, 6/21/95 (5162).

UKRAINE WITH BULGARIA

6/95

The Bulgarian Ministry of Defense buys ST-68 radars from Ukraine after being told, incorrectly, that they would be compatible with Bulgaria's new Russia S-300 'Grumble' PMU air defense missile systems. When the radars fail to work with the missile systems, Bulgaria is forced to replace them with alternative models from Russia.

Aleksandr Sychev, *Izvestiya* (Moscow), 6/6/95, p. 3; in JPRS-UMA-95-025, 6/6/95 (5104).

UKRAINE WITH EGYPT AND RUSSIA

6/95

Ukraine's Security Service Administration (SBU) says that a Russian citizen, Valeriy Baytter, has been arrested for attempting to steal classified information on the technical specifications of missiles from the Pivdenmash facility in Dnepropetrovsk. In 1994, Baytter apparently sent an assistant to Pivdenmash to do the same thing, but he was also apprehended. Baytter says he was contracted by an Egyptian "entrepreneur", although the SBU believes the Egyptian is in the service of an Arab intelligence agency.

Volodymyr Zemlyanyy, *Uryadovyy Kuryer* (Kiev), 6/20/95, p. 12; in FBIS-SOV-95-120, 6/20/95 (5169).

UKRAINE WITH IRAN AND ISRAEL

5/95

Israel denounces Ukraine's sale of eight SS-N-22 'Sunburst' [sic] anti-ship cruise missiles to Iran. Ukraine is reported to have sold the cruise missiles to Iran for \$450,000 each after it failed to sell the missiles to the U.S.

Agence France Presse International News, 5/14/95; in *International Security Digest*, 5/95 (5229).

5/95

Ukrainian Ambassador Ivan Maydan rejects Israeli accusations that his country is selling anti-ship missiles to Iran. Maydan says that Tehran and Kiev are cooperating on political, economic, and cultural matters and that he hopes for increased ties between the two countries.

IRNA (Tehran), 5/17/95; in FBIS-NEW-95-096, 5/17/95 (5111).

UKRAINE WITH MULTI-COUNTRY GROUP

4/1/95

The U.S. invites Ukraine to participate in joint space ventures, including the proposed Sea Launch project to launch Ukrainian Zenit rockets from a converted, mobile offshore oil platform. The joint venture includes Boeing of the U.S., Kvaerner A/S of Norway, SC Energia of Russia, and Ukraine's NPO Yushnoye. Boeing is the project's primary system integrator and marketer, and will provide the principal share of the estimated \$400 to \$500 million required to finance the project.

Warren Ferster and Peter B. de Selding, *Space News*, 4/10/95-4/16/95, pp. 1, 20 (5171). Warren Ferster, *Space News*, 5/8/95-5/14/95, pp. 1, 29 (5185).

UKRAINE WITH RUSSIA

3/95

In 1994, Ukraine removed approximately 700 nuclear warheads from SS-24 and SS-19 ICBMs belonging to the 46th Missile Division at Pervomaysk and transported 360 warheads to Russia.

Robert S. Norris and William M. Arkin, *Bulletin of the Atomic Scientists*, 3/95-4/95, pp. 78-79 (5079).

5/26/95

Head of Russia's Strategic Missile Troops Colonel-General Viktor Yesin says that Russia maintains "operational control" of 93 ICBMs in Ukraine. Yesin says the warheads on the Ukrainian missiles will be destroyed by 6/96.

Doug Clarke, *Omri Daily Digest*, 5/29/95 (5041). Interfax (Moscow), 5/26/95; in FBIS-SOV-95-103, 5/26/95 (5117).

UKRAINE WITH UNITED STATES

1/95

Former intelligence chief of the U.S. Department of Defense Lieutenant General (ret) Leonard Perroots was able to purchase "top secret" Russian ship-to-ship Moskit missiles from Ukraine. Perroots went initially to Russia to make the purchase but was turned down.

Military Parade, 1/99-2/95, pp. 10-11 (5164).

2/95

On a recent visit to the U.S., Ukrainian President Leonid Kuchma discussed a possible \$700 billion [sic] grant to ASSO-UNITI for the "Ariadna" space program.

Zenon Starchenko, *Khreshchatyk* (Kiev), 1/20/95, p. 2; in JPRS-TAC-95-001, 2/14/95, pp. 50-51 (5065).

3/31/95

In exchange for Kiev's promise to adhere to MTCR guidelines, U.S. Secretary of Defense William Perry agrees to allow Ukraine to offer its space-launch services for commercial U.S. payloads. In discussions with Ukrainian President Leonid Kuchma and Ukrainian defense officials, Perry agreed not to build a "monitoring fence" around a defunct SS-24 production complex in Pavlograd. Perry says that the decommissioning of Ukraine's 176 SS-24 and SS-19 ICBMs is proceeding ahead of schedule, and that Ukraine should be a non-nuclear state in about 18 months. The U.S. plans to give Ukraine an additional \$20 million for missile disarmament. Ukraine is attempting to convert its production capability from ICBMs to SLVs. Perry says that Ukraine's project to sell SS-24 missiles as converted space launch boosters needs to be discussed further because it could pose a potential proliferation threat.

Bill Gertz, *Washington Times*, 4/1/95, p. A2 (5031).

4/2/95

U.S. Secretary of Defense William Perry tells a press conference, "Ukraine works consistently for the cause of disarmament and peace. Being present at the process of taking an SS-19 strategic nuclear missile off combat duty at the Pervomaik Division, I again satisfied myself that Ukraine is a seri-

ous partner that does not use words lightly." Commenting on Ukraine's possible involvement in international space programs, Ukrainian Parliamentary Speaker Oleksandr Moroz says that Ukraine has the necessary infrastructure for a space program and that "Ukrainian access to space launches would boost the conversion process."

Itar-Tass (Moscow), 3/31/95; in FBIS-SOV-95-063, 3/31/95 (4989). Radio Ukraine World Service (Kiev), 4/2/95; in FBIS-SOV-95-063, 4/2/95 (4989).

5/95

In 7/95, the U.S. will provide Ukraine with a draft version of a U.S.-Ukraine space-launch accord. A final round of discussions will probably take place in the fall of 1995.

Space News, 5/8/95-5/14/95, p. 2 (4986). Warren Ferster and Peter B. de Selding, *Space News*, 5/22/95-5/28/95, p. 3 (5241).

UNITED ARAB EMIRATES

UNITED ARAB EMIRATES WITH FRANCE

3/95

The French company Aerospatiale has sold over 6,000 missiles to the UAE in the last decade, including AM-39 Exocet air-to-surface missiles and MM-40 anti-ship missiles.

Jacques de Lestapis, *Jane's Defence Weekly*, 3/18/95, p. 46 (4978).

UNITED ARAB EMIRATES WITH FRANCE AND ITALY

3/18/95

The UAE is said to be considering acquisition of the MM-40 Exocet and Otomat (France/Italy) missiles for its coastal defense system.

Jacques de Lestapis, *Jane's Defence Weekly*, 3/18/95, pp. 38-42 (5033).

UNITED ARAB EMIRATES WITH MULTI-COUNTRY GROUP

3/18/95

Though Dubai, part of the UAE, has selected the Chinese HY-2 missile for its coastal defense requirement, other members of the federation are considering the MM-40 Exocet, Otomat (France/Italy) and Hellfire (U.S./Sweden) systems.

Jacques de Lestapis, *Jane's Defence Weekly*, 3/18/95, pp. 38-42 (5033).

UNITED ARAB EMIRATES WITH RUSSIA

4/25/95

UAE Military Chief of Staff Muhammad bin-Zayid al-Nuhayyan enters negotiations with top Russian officials regarding possible acquisition of missile and land-based air defense systems. It is speculated that the Soviet and Russian practice of selling obsolete Warsaw Pact weaponry to Abu Dhabi as "new" equipment is also discussed.

NTV (Moscow), 4/25/95; in FBIS-SOV-95-080, 4/25/95 (5204).

UNITED ARAB EMIRATES WITH RUSSIA AND UNITED STATES

4/95

Russia offers the UAE three S-300V (SA-10/12) air defense systems in exchange for cancellation of \$500 million in debt. General Director of the Russian Arms Export Agency Rosvoorouzhenie Alexander Kotelkin believes, on a technical basis alone, the Russian proposal will beat Raytheon's counter-offer. Emphasizing their interoperability with a GCC-wide air defense network, Raytheon is offering 10 Patriot launchers for \$1 billion.

Jane's Defence Weekly, 4/1/95, p. 10 (5052).

UNITED ARAB EMIRATES WITH UNITED KINGDOM

2/95

The U.K. blocks the sale of GEC-Marconi's al-Hakim missile to the UAE because of a possible MTCR violation.

The Sunday Telegraph, 2/26/95; in *International Security Digest*, 2/95 (4974).

3/95

The U.K. approves a revised design of GEC-Marconi's PGM-4 long-range air-to-surface missile to compete for the UAE's stand-off requirement. Despite its funding of the PGM-4's design and development, the UAE will also consider other systems such as the French Matra Apache, to fulfil this requirement.

Flight International, 3/22/95-3/28/95, p. 25 (4967).
Carol Reed, *Jane's Defence Weekly*, 4/8/95, p. 13 (4967).

UNITED ARAB EMIRATES WITH SWEDEN AND UNITED STATES

3/18/95

The UAE is considering acquisition of the U.S./Swedish Hellfire coastal defense system.

Jacques de Lestapis, *Jane's Defence Weekly*, 3/18/95, pp. 38-42 (5033).

UNITED ARAB EMIRATES WITH UNITED STATES

3/95

The UAE considers the McDonnell Douglas Harpoon Block 1G and the Aerospatiale MM-40 Block 2 Exocet missiles to equip its ASW frigates for their long-range SSM requirement. The Hughes Standard Missile SM-2 Block III and the Eurosam Aster ED are being considered for the UAE's air defense requirement.

James Bruce, *Jane's Defence Weekly*, 3/4/95, p. 8 (4977).

UNITED KINGDOM

UNITED KINGDOM WITH BRAZIL

3/95

The U.K. will sell four Broadsword-class frigates, armed with Seawolf missiles, to Brazil. Deliveries are scheduled for between 6/95 and 4/97.

For Your Eyes Only, 3/20/95 (5055).

UNITED KINGDOM WITH ISRAEL

4/95

Senior officials from the U.K. Ministry of Defence are briefed on the Israeli Arrow system and Rafael's Python-4 short-range infrared-guided missile during a visit to Israel. Israel offers a limited number of Python-4s for the RAF's front-line aircraft pending its deployment of British Aerospace's Advanced Short-Range Air-to-Air Missile (ASRAAM) around the year 2000.

Douglas Barrie, *Flight International*, 4/26/95-5/2/95, p. 5 (4968).

6/95

Silver Arrow, Israel's manufacturer of unmanned air vehicles (UAV), purchases an 80 percent share of its U.K. engine supplier, Alvis UAV Engines. Alvis' 741 engine powers both the Hermes and Darter UAVs.

Flight International, 6/7/95-6/13/95, p. 32 (5043).

UNITED KINGDOM WITH RUSSIA

4/95

The head of Russian presidential security, General Korzhakov, criticizes the lack of controls over Russian arms exports in a confidential report to President Boris Yeltsin. The report says that Volentech allegedly sold Toungouz rocket launchers to the British secret service.

Le Figaro (Paris), 4/7/95, p. 3; in FBIS-SOV-95-068, 4/7/95 (4984).

UNITED KINGDOM WITH SOUTH AFRICA

6/95

Speaking at the Le Bourget Paris Air Show, Kentron officials say they will offer their ramjet technology to meet the U.K.'s SR(A)1239 future medium-range air-to-air missile requirement.

Jane's Defence Weekly, 6/17/95, p. 5 (5246).

UNITED KINGDOM WITH SPAIN AND SOUTH AFRICA

4/95

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Ian Kemp, *Jane's Defence Weekly*, 4/29/95, p. 34 (5096).

UNITED KINGDOM WITH UNITED ARAB EMIRATES

2/95

The U.K. blocks the sale of GEC-Marconi's al-Hakim missile to the UAE because of a possible MTCR violation.

Sunday Telegraph, 2/26/95; in *International Security Digest*, 2/95 (4974).

3/95

The U.K. approves a revised design of GEC-Marconi's PGM-4 long-range air-to-surface missile to compete for the UAE's stand-off requirement. Despite its funding of the PGM-4's design and development, the UAE will also consider other systems, such as the French Matra Apache, to fulfill this requirement.

Flight International, 3/22/95-3/28/95, p. 25 (4967). Carol Reed, *Jane's Defence Weekly*, 4/8/95, p. 13 (4967).

UNITED KINGDOM WITH UNITED STATES

5/95

The U.S. and the U.K. recently completed a joint exercise which envisioned a scenario, in 2007, to test the U.K.'s strategy and doctrine for missile defense. The U.K. is spending 5 million pounds on a study of missile defenses. The review should be complete in approximately 18 months.

Robert Holzer, *Defense News*, 5/8/95-5/14/95, p. 12 (5058). Christopher Bellamy, *The Independent*, 5/23/95 (5058).

UNITED NATIONS

UNITED NATIONS WITH EGYPT

6/95

UNSCOM head Rolf Ekeus meets with Egyptian Foreign Minister 'Amr Musa in Cairo to discuss Egypt's past missile cooperation with Iraq. The visit is intended to verify information received from Iraq on the joint Egyptian/Iraqi/Argentine Condor II missile program and the joint Egyptian/Iraqi chemical weapons program.

Voice of the Iraqi People (Clandestine), 6/7/95; in FBIS-NES-95-110, 6/7/95 (5194).

UNITED NATIONS WITH IRAQ

2/21/95

The former head of Iraqi intelligence General Wafiq Samra'i, who defected to the West, writes a letter to UNSCOM Chief Rolf Ekeus claiming that Iraq is still hiding long-range missiles and chemical and biological weapons. Ekeus describes the U.N. long-term monitoring effort as satisfactory, although there is some concern about Iraqi biological weapons. In 1994, Samra'i claimed Iraq was hiding possibly 10 TEL systems and up to 80 Scud-B and al-Hussein missiles.

Leon Barkho, Reuter, 2/22/95; in Executive News Service, 2/22/95 (5046).

3/13/95

The U.N. Security Council decides to continue sanctions against Iraq after the U.S. proved that it had rebuilt factories capable of producing missiles in contravention of existing U.N. resolutions.

Robert Corzine, *Financial Times*, 3/14/95, p. 4 (4955).

6/19/95

Iraq says it will cooperate fully with UNSCOM officials by surrendering documents pertaining to its biological weapons materials only if the U.N. closes its investigation of chemical and long-range ballistic missile programs. Head of UNSCOM Rolf Ekeus states that he is convinced that Iraq no longer has any "significant capabilities" in the areas of chemical and ballistic weapons.

Evelyn Leopold, Reuter, 6/20/95; in Executive News Service, 6/20/95 (5190).

UNITED STATES

INTERNAL DEVELOPMENTS

9/30/95

The U.S. Commerce Department's Bureau of Export Administration publishes missile technology control revisions to the U.S. Commodity Control List (CCL).

Federal Register 49798, 9/30/94 (4686).

UNITED STATES WITH AUSTRALIA

5/95

Australian officials say plans to develop software as part of a cooperative ground-based theater missile defense research project with the U.S. will not violate the ABM Treaty and do not reflect a change in Australia's opposition to "Star Wars" research. The software will be designed to locate and destroy incoming missiles.

Graeme Dobell, Radio Australia (Melbourne), 5/19/95 (5082).

UNITED STATES WITH AUSTRALIA AND FRANCE

3/95

Australia announces its decision to make a final decision before the end of 1995 regarding whether to purchase Rafael's Popeye or Rockwell's AGM-130 air-to-surface missile. Deliveries of the missiles, which are to equip the RAAF's F-111C/Gs and possibly F-18s, could commence by FY 1996-97.

Flight International, 3/29/95-4/4/95, p. 9 (5087).

UNITED STATES WITH BAHRAIN

1/95

The U.S. agrees to sell Bahrain a Hawk air defense missile battery.

Philip Finnegan, *Defense News*, 4/17/95, pp. 1, 45 (5048).

4/95

Bahrain seeks the U.S. Army's Army Tactical Missile System for its existing MLRS but, according to a Pentagon official, the U.S. is restricted from transferring this system under the MTCR.

Philip Finnegan, *Defense News*, 4/17/95, pp. 1, 45 (5048).

UNITED STATES WITH BELARUS

1/95

U.S. Deputy Assistant Secretary of Defense Gloria Duffy meets with officials from the Belarusian government to discuss disarmament, defense conversion and housing needs for personnel demobilized from the Belarusian strategic missile forces. Duffy also assures Belarus that Congress will continue to support U.S. financing for disarmament. The U.S. plans to give \$6 million in aid for the destruction of the approximately 15,000 tons of rocket fuel left behind by Russian troops.

Belapan (Minsk), 1/25/95; in JPRS-TAC-95-001, 2/14/95, p. 48 (5024).

5/95

Belarus First Deputy Foreign Minister Valeriy Tsepkalo says that the U.S. has

granted Belarus an additional \$6 million for the destruction of dismantled missile launch facilities at Krona. There were 81 such launch sites in Belarus after the breakup of the former Soviet Union.

Interfax (Moscow), 5/18/95; in FBIS-SOV-95-097, 5/18/95 (5137).

6/23/95

The U.S. agrees to give Belarus \$19 million to "monitor the physical protection of nuclear materials in Sosny, to destroy liquid rocket fuel and missile launching pads, and also to destroy the nuclear infrastructure."

Valentin Menshikov, Itar-Tass (Moscow), 6/23/95; in FBIS-SOV-95-122, 6/23/95 (5123).

UNITED STATES WITH BRAZIL

2/95

The head of Brazil's Strategic Affairs Secretariat Ambassador Ronaldo Sardemberg has informed U.S. Ambassador Melvin Levitsky of Brazil's intention to join the MTCR. Brazil began to express interest in joining the MTCR in early 1994 and established norms for national export controls in 12/94.

Leandro Fortes, *Jornal Do Brasil* (Rio de Janeiro), 2/7/95, p.4, in JPRS-TAC-95-001, 2/14/95, p.6

4/20/95

In an interview, Director of the Brazilian Space Agency Ajax Barros de Melo says that Brazil's commitment to join the MTCR, possibly by 10/95, should strengthen its relationship with the U.S. In particular, de Melo notes the significance of an anticipated memorandum of understanding with the U.S. to facilitate future cooperation on space projects. Brazil's space efforts are focused on the VLS satellite launcher and development of the Alcantara launch site for commercial launch purposes. Brazil expects that full MTCR membership will allow it to acquire advanced technology which will then enable it to meet the scheduled 4/96 launch date for the new expendable launch vehicle. The Brazilian booster is a four-stage rocket capable of placing a 150-kg payload into orbit. Total funding for Brazil's space research and development program, including university and environmental projects,

is \$150 million, twice the figure allotted for 1994. From 1980 to 1995, Brazil invested approximately \$300 million in its space launch infrastructure.

Patrick Seitz, *Space News*, 4/24/95-4/30/95, pp. 3, 29 (5144). *Defense News*, 4/24/95-4/30/95, p. 6 (5145).

UNITED STATES WITH BRAZIL AND RUSSIA

5/95

The Clinton administration determines that Russia recently transferred advanced missile technology to Brazil but indicates in a secret memo to Congress that it will waive sanctions. According to a Clinton administration official, the decision to waive sanctions over the sale of carbon fiber, which is used in building rocket motor cases, comes after a Russian promise to stop sales to Brazil. A Brazilian official says that Brazil's 2/94 promise [as reported] to adhere to MTCR guidelines applies only to the sale and not to the purchase of missile technology. U.S. officials say the decision to waive sanctions is part of an effort to encourage Brazil to become a full MTCR member. Other U.S. officials are quoted as saying the waiver could trigger instability in South America, prompting Argentina to renew its Condor program. A Washington-based non-proliferation expert says the lack of commercial demand for Argentine and Brazilian space launch vehicles may lead to an increased risk of the technology being transferred to ballistic missile programs.

R. Jeffrey Smith, *Washington Post*, 6/8/95, pp. A23, A27 (5146). Warren Ferster, *Space News*, 6/12/95-6/18/95, p. 12 (5234).

UNITED STATES WITH HUNGARY

5/2/95

Hungarian foreign affairs spokesman Gabor Szentivanyi says that Hungary's defense and foreign ministries will sign an agreement with the U.S. to demolish Scud tactical missiles which were decommissioned in the early 1990s.

MTI (Budapest), 5/2/95; in FBIS-EEU-95-085-A, 5/2/95 (5060).

UNITED STATES WITH INDIA

3/31/95

Walter Lachman and Maurice Subilia, CEO and President respectively of Fiber Materials Inc. and its subsidiary Materials International, are found guilty of violating U.S. export laws for their roles in the shipment of a specially-designed machine control panel to India's Defense Research and Development Laboratory. Shipped to Hyderabad in 4/88, the panel is used to control Hot Isostatic Presses (HIPs), which can be used to produce carbon/carbon, a key component in manufacturing missile nose cones.

Export Control News, 3/31/95, pp. 4-7 (5218).

UNITED STATES WITH INDIA AND PAKISTAN

4/95

On a visit to Washington, Pakistani Prime Minister Benazir Bhutto pushes the U.S. to release the F-16 aircraft that Pakistan has already paid for. India threatens to resume production of its Prithvi missile if Pakistan receives the F-16s. Pakistan's response to such a development could be increased purchases of M-11 missiles from China.

Ranit Kumar, *Navbharat Times* (Delhi), 4/17/95, p. 6; in FBIS-NES-95-075, 4/17/95 (5050).

4/95

Speaking before the U.S. House Foreign Relations Subcommittee, U.S. Assistant Secretary of State for South Asian Affairs Robin Raphel says that both India and Pakistan could build a small number of nuclear warheads in short order and that each wants to acquire or develop ballistic missile delivery systems that are nuclear-capable. Raphel says the U.S. is concerned about the possibility of a ballistic missile race in South Asia.

Ali Abbas Rizvi, *Asian Defence Journal*, 4/95, p. 87 (5217).

5/31/95

Pakistani President Farooq Ahmad Khan Leghari says "Pakistan will do whatever is necessary for its security...Pakistan has the means to protest [protect] itself" against the

Indian Prithvi and other missile systems which are threatening Pakistan. Leghari adds that while the Prithvi missile is "Pakistan specific," India's Agni missile will also target the Middle East, the Far East and China. Leghari also says that Pakistan has asked the U.S. to help dissuade India from producing the Prithvi and that Pakistan "want[s] a zero missile level in the region." In response to the Indian missile program, Pakistan has decided to increase the effective range of its Hatf and Anza missile systems.

Nation (Islamabad), 5/31/95, pp. 1, 3; in FBIS-NES-95-105, 5/31/95 (5197).

UNITED STATES WITH ISRAEL

3/95

The U.S. Ballistic Missile Defense Organization (BMDO) plans to award a follow-on contract to Israel's Wales company to determine whether Israel's Boost-phased Intercept System (IBIS) will meet U.S. Theater Missile Defense (TMD) requirements by modifying and simulating preliminary IBIS results.

International Defense Review, 3/95, p. 17 (4962).

6/95

Unnamed senior sources from Israel's defense establishment say that if Israel withdraws from the Golan Heights, it should be compensated with U.S. funding for the manufacture and deployment of operational Arrow missiles. It is reported that the Arrow missile is necessary to counter Syria's Scud-C missiles, which would come down in a "barrage" if Damascus launched a surprise offensive. Syria is reported to have 62 launchers and hundreds of surface-to-surface missiles.

Qobi Marenko, Channel 2 Television Network (Jerusalem), 6/21/95 (5131).

UNITED STATES WITH JAPAN

3/25/95

Commander of the U.S. Seventh Fleet Rear Admiral Archie Clemens urges the Japanese Defense Agency to purchase additional Aegis destroyers for incorporation into a pro-

posed joint U.S.-Japan TMD system.

Naoaki Usui, *Defense News*, 4/3/95, p. 3 (5091).

4/1/95

The Japanese Defense Agency (JDA) creates the Ballistic Missile Defense Study Office. The new office will work with the U.S. BMDO and the U.S. Pacific Command to determine the threat posed by ballistic missiles, such as North Korea's No-dong-1. Japanese officials emphasize that the new program does not represent a commitment to fielding a TMD system. It is reported that the JDA is divided internally between those wanting a system to counter threats and those who are concerned about spending money on a potentially ineffective system.

Naoaki Usui, *Defense News*, 4/3/95, p. 3 (5091). *Mainichi Shimbun* (Tokyo), 3/17/95, p.3 (5126).

UNITED STATES WITH KAZAKHSTAN

4/5/95

U.S. Secretary of Defense William Perry meets Kazakhstan President Nursultan Nazarbayev to explore potential joint venture defense projects and to discuss international and regional security issues. Perry announces that four U.S. companies will invest more than \$21 million to convert Kazakhstani defense industries. This will include conversion of the Gidromash enterprise from the production of missile systems to the production of pressure valves and containers for cryogenic materials.

Sovety Kazakhstana (Almaty), 4/7/95, p.1; in FBIS-SOV-070, 4/7/95 (4983). *Krasnaya Zvezda* (Moscow), 4/7/95, p. 1; in FBIS-SOV-95-068, 4/7/95 (4983).

UNITED STATES WITH NORTH KOREA

3/13/95

The U.S. Embassy releases a statement from Under Secretary for Arms Control and International Security Lynn Davis which says that the U.S. will not normalize relations with North Korea until it stops exporting missiles to countries such as Iran and Syria.

Yonhap (Seoul), 3/13/95; in FBIS-EAS-95-048, 3/13/95, (5174).

6/95

[U.S. Ambassador-at-Large] Robert Gallucci says that the U.S. intends to negotiate North Korea's cessation of ballistic missile production and export. Gallucci also says that "The longest range missiles under development now are in the 4,000 to 5,000 kilometer range. These missiles are not only for force projection in Northeast Asia, we believe, but also for export."

Yonhap (Seoul), 6/16/95; in FBIS-EAS-95-116, 6/16/95 (5252).

UNITED STATES WITH PAKISTAN

4/28/95

The U.S. Department of State refuses to comment on allegations that a Pakistani army officer had been arrested for selling information on Pakistan's missile program to the U.S. The charge is considered to be politically sensitive for the Pakistani government because information passed to the U.S. could be given to Israel, which has an alleged working relationship with India's intelligence service.

DAWN (Karachi), 4/30/95, p. 20; in FBIS-NES-95-083, 4/30/95 (5211).

UNITED STATES WITH PAKISTAN AND PRC

6/22/95

Pakistan denies that it has received any M-11 missile components from China and says the U.S. has not produced any evidence to the contrary. Pakistan also denies it has violated the MTCR.

Xinhua (Beijing), 6/22/95; in FBIS-CHI-95-121, 6/22/95 (5198).

UNITED STATES WITH PRC

1/30/95

China and the United States finalize a seven-year agreement on commercial space launches. Under the agreement China is authorized to conduct 11 international space launches to geo-synchronous orbit through 12/31/01, but can increase this number if market demand rises. China agrees to keep

its launch prices comparable with similar services offered in the West.

Statesman (Calcutta); in Asian Recorder, 2/26/95-3/4/95 (5007).

3/95

According to arms transfer specialist Kenneth Timmerman the U.S. Commerce Department's 1994 approval of the Garret Engine Co.'s sale of gas turbine engines to China could help the Chinese improve their cruise missiles. According to Timmerman, the goods were approved for export despite a declared military end-use. The U.S. Commerce Department decided that the sale did not violate U.S. export control laws because the engines would be shipped without the Full Authority Digital Engine Control (FADEC) system and would therefore be "brainless." A subsequent deal between China and the U.K.'s Lucas Aerospace, in which digital engine controls for the K-8 jet trainer are to be transferred, clears the way for China to design its own long-range cruise missile based on the Garret engine. Timmerman first published his observations in the 3/95 issue of *The American Spectator*.

Security Affairs, 3/95-4/95, p. 4 (5140).

4/95

Chinese officials say their government will pay all claims stemming from the 1/26/95 failed launch of a Long March 2E rocket at the Xichang Satellite Launch Center. The rocket was due to place a Hughes HS 601 satellite, owned by the Hong Kong-based Asia-Pacific Telecommunications Co., into orbit. The failed launch was similar to a 12/92 failure which also involved a Long March 2E vehicle and has never been explained.

Peter B. de Selding, *Space News*, 4/3/95-4/9/95, p. 4 (5143).

4/17/95

Chinese Foreign Minister Qian Qichen and U.S. Secretary of State Warren Christopher agree to cooperate to further nuclear non-proliferation objectives. In talks on Sino-U.S. relations, Qian and Christopher also reaffirm their commitment to their "Joint Declaration on the Issue of the Proliferation of Guided Missiles" of 10/4/94, and

agree to initiate specialist meetings on the control of missile technology. They also reiterate the importance of extending the NPT, express their support for the framework agreement between the U.S. and the DPRK, and pledge to cooperate further in the peaceful use of nuclear energy in accordance with the Sino-U.S. nuclear cooperation agreement of 1985.

Gao Jian, Xinhua (Beijing), 4/18/95; in FBIS-CHI-95-075, 4/18/95 (4992).

5/95

During a U.S. Department of Defense wargame intended to forecast future Chinese and U.S. military capabilities, the U.S. loses, due partly to new precision-guided, long-range cruise missiles that China is currently developing with technology from U.S. Allied Signal Inc. China's production of more accurate long-range ballistic missiles and Han-class nuclear submarines is expected to lead to a marked shift in global power.

Al Santoli, *Washington Times*, 3/28/95, p. A17 (4993).

5/28/95

China's foreign ministry spokesman Shen Guofang announces Beijing is to postpone consultations with the U.S. on the MTCR in response to the U.S. decision to allow Taiwan's President Lee Teng-hui to visit. Shen adds that China is also postponing the 6/95 visit of the Director of the U.S. Arms Control and Disarmament Agency and the 7/95 visit of the Deputy Assistant Secretary of State for Politico-Military Affairs.

Xinhua (Beijing), 5/28/95; in FBIS-CHI-95-103, 5/28/95 (4994). Steven Mufson, *International Herald Tribune*, 5/29/95 (5008). *Economist*, 6/3/95, p. 4 (5209).

6/95

A CIA report indicates that China has recently transferred missile components to Iran and Pakistan in possible violation of the MTCR. If a violation has occurred, the U.S. would be required to impose sanctions, say U.S. officials. The CIA report states that over the past 12 months China has delivered dozens, if not hundreds, of computerized machine tools and missile guidance systems, giving Iran the ability to increase its North Korean Scud missile accuracy and to build its own Scud-type missiles. Since

3/95, China is also believed to have transferred of parts to Pakistan that could be used in M-11 missiles. A Chinese Foreign Ministry spokesman said China was abiding by its commitment to the MTCR and that the CIA report was "groundless."

Elaine Sciolino, *New York Times*, 6/22/95, pp. A1, A7 (5139).

UNITED STATES WITH RUSSIA

3/95

In 4/95 or 5/95, Aerojet of Sacramento, CA, intends to import two Russian liquid-fueled NK-33 rocket engines for testing, prior to offering them as replacements for U.S. rockets.

Susan Dowd, *Space News*, 3/6/95-3/12/95, p. 2 (5070).

3/95

Logistical and financial problems are reported to plague the implementation of START verification activities. Apart from the difficulties experienced in transporting and accommodating U.S. inspection teams and their Russian escorts to sites throughout Russia, treaty-required recordings of telemetric data from SLBM launches have been impossible to obtain because Russia cannot repair its recording instruments. Some experts believe START implementation may require billions, possibly trillions of rubles. Although intended to help reduce Russia's strategic missiles, Nunn-Lugar funding does not give the Russians what they really want, "equipment for the hydraulic removal of solid fuel charges of the rockets being eliminated."

Gennadiy Obolenskiy, *Krasnaya Zvezda* (Moscow), 3/23/95, p. 3; in FBIS-SOV-95-062, 3/23/95 (5168).

3/3/95

U.S. missile inspectors conduct their first surprise inspection of Russian missile facilities under the START I agreement. According to a U.S. embassy spokesman, one of the three teams visited Kostroma to inspect a SS-24 ICBM site. Although the location of the other two inspection teams was not given, the U.S. spokesman says that all 55 Russian missile sites will be inspected in the next 120 days. Russian inspectors

will arrive in the U.S. on 3/4/95.

Reuter, 3/3/95 (5242).

4/95

U.S. officials announce that they are considering Russia's request to renegotiate the Russian-U.S. space-launch accord reached in 9/93. The request follows a 1/27/95 deal between the U.S. and China which gave Beijing more freedom than Moscow in determining the price and quantity of its western payload launches.

Space News, 4/17/95-4/23/95, p. 16 (4988).

4/95

The U.S. is developing a Mach 3 "Harpoon II" missile to defeat anti-missile defenses, and has bought a Russian target derivative of the supersonic Zvezda Kh-31A for anti-ship missile simulation tests.

Stewart Walters, *Asian Defense Journal*, 4/95, pp. 37-40 (5056).

4/95

During the 1995 IDEX exhibition in Abu Dhabi, Russian officials say they would be interested in selling the S-300 'Grumble' system to the U.S., but only if several batteries were included in such a deal.

Charles Bickers, *Jane's Defence Weekly*, 4/8/95, p. 12 (5112).

4/14/95

A spokesman from Rosvooruzheniye announces that Russia will sell a mobile S-300 V SAM system to the U.S. for \$60 million.

Marcus Warren, *The Daily Telegraph*, 4/15/95 (5069). Christopher Foss and Barbara Starr, *Jane's Defence Weekly*, 4/29/95 (5085)

5/95

Russia's Zvezda design bureau joins the U.S.'s McDonnell Douglas Aerospace to supply the U.S. Navy with four Russian M-31 ramjet-powered, supersonic, sea-skimming aerial target vehicles for FY 1995/96. The U.S. Navy will use the M-31s to simulate anti-ship cruise missile threats. If tests are successful, an additional three to 20 M-31s could be supplied in FY 1997.

Flight International, 5/24/95-5/30/95, p. 26 (5020).

5/95

The U.S. and Russia will hold a series of joint missile defense exercises commencing with command post exercises in 1996 and 1997, and culminating with a field exercise in Russia in 1997. The field exercise will involve U.S. Patriot Advance Capability (PAC-2) and Russian SV-300 missiles. The exercises could cost up to \$5 million.

Robert Holzer, *Defense News*, 5/8/95-5/14/95, p. 12 (5058). Christopher Bellamy, *The Independent*, 5/23/95 (5058).

5/95

Thiokol is awarded a U.S. Defense Nuclear Agency contract to convert liquid propellant from Russian ICBMs into chemicals suitable for commercial applications. Thiokol will provide the Russian government with the equipment, materials, training, and support necessary for the environmentally sound disposal of unsymmetrical dimethyl hydrazine (UDMH) liquid rocket propellant. Two U.S. companies and the Russian stock company Askond will also participate.

Jane's Defence Contracts, 5/95, p. 12 (5115).

5/95

Russian-made rocket engines are offered for competition in a U.S. contract to upgrade expendable launch vehicles. The two engines are the liquid-fueled RD-180 developed by NPO Engergomash, and the NK-33 developed by the Samara State Scientific and Production Enterprise.

Warren Ferster, *Space News*, 5/8/95-5/14/95, p. 12 (5116).

5/10/95

U.S. President Bill Clinton and Russian President Boris Yeltsin agree on a joint statement of principles on the development of "tactical" ABM systems. It is reported that because Russia's Start-2 satellite launch rocket ditched into the ocean after following a ballistic trajectory on 3/29/95, the U.S. Department of Defense has decided that all future Start rockets will be included under the START I agreement's quota of carrier rockets.

Pavel Felgengauer, *Segodnya* (Moscow), 5/11/95, p. 1; in FBIS-SOV-95-091, 5/11/95 (5026).

5/15/95

A U.S. Congress Office of Technology Assessment report recommends caution to U.S. companies and government agencies wanting to form joint enterprises with Russian partners. The report says that continued Russian adherence to MTCR Guidelines should be an important consideration in any cooperation with Russia.

Ben Ionnatta, *Space News*, 5/22/95-5/28/95, p. 17 (5166).

6/95

Russia's Krunichev and NPO Energia form a joint venture with U.S. Lockheed Martin to merge the launcher capabilities of the Atlas and Proton SLVs. The first commercial Proton launch is scheduled for 3/96.

Flight International, 6/21/95-6/27/95, p. 27 (5166).

6/95

Between 6/29/95-6/30/95, Russian Prime Minister Chernomyrdin and U.S. Vice President Gore discuss Russia's future official membership of the MTCR.

Aleksandr Kudakayev, *Segodnya* (Moscow), 6/27/95, p. 2; in FBIS-SOV-95-123, 6/27/95 (5170).

UNITED STATES WITH RUSSIA AND SOUTH KOREA

5/95

Having been pressured by the U.S. to buy Patriot missile systems rather than Russian S-300s, South Korea is reported to remain interested in unspecified Russian weapon systems.

Aleksandr Koretskiy, *Kommersant Daily* (Moscow), 5/16/95, p. 3; in FBIS-SOV-95-094, 5/16/95 (5124).

UNITED STATES WITH RUSSIA AND UNITED ARAB EMIRATES

4/95

Russia offers the UAE three S-300V (SA-10/12) air defense systems in exchange for cancellation of \$500 million in debt. General Director of the Russian Arms Export Agency Rosvoorouzhenie Alexander Kotelkin believes, on a technical basis alone, the Russian proposal will beat Raytheon's

counter-offer. Emphasizing their interoperability with a GCC-wide air defense network, Raytheon is offering 10 Patriot launchers for \$1 billion.

Jane's Defence Weekly, 4/1/95, p. 10 (5052).

UNITED STATES WITH SOUTH KOREA

3/95

South Korea awards a \$5 million contract to AAI of Hunt Valley, Maryland to jointly produce two prototype unmanned aerial vehicle (UAV) systems with Daewoo Corporation. The UAVs are expected to be used in spy missions over North Korean military facilities, including multiple launch rocket sites.

Barbara Opall, *Defense News*, 3/20/95, p. 36 (5107).

4/95

In 1994, South Korea imported 48 Patriot missile launching ramps and 192 warheads from the U.S. The report says the missiles are deployed "at front areas along the Military Demarcation Line."

Korean Central Broadcasting Network (Pyongyang), 4/7/95; in FBIS-EAS-95-069, 4/7/95 (5109).

UNITED STATES WITH TAIWAN

5/12/95

Deputy Commander-in-Chief of the Taiwanese Army Lieutenant General Chang Kuangchin says that three batteries of the most recent variant of the Patriot missile ordered from Raytheon in 6/94 will be delivered in 7/97. Chang says preliminary testing of the Tienkung II (Skybow) and the updated version of the indigenously developed Tienkung I medium-range SAM have been completed.

Benjamin Yeh, CNA (Taipei), 5/13/95; in FBIS-CHI-95-093, 5/13/95 (5080). *Flight International*, 4/26/95-5/2/95, p. 16, (5134).

UNITED STATES WITH TURKEY

4/95

The U.S. Department of Defense notifies Congress that Turkey will purchase 16 McDonnell Douglas Harpoon anti-ship missiles for \$28 million.

Jane's Defence Weekly, 4/8/95, p. 4 (4960). *Flight International*, 4/5/95-4/11/95, p. 22 (4960).

UNITED STATES WITH UKRAINE

1/95

Former intelligence chief of the U.S. Department of Defense Lieutenant General (Ret) Leonard Perroots was able to purchase "top secret" Russian ship-to-ship Moskit missiles from Ukraine. Perroots went initially to Russia to make the purchase but was turned down.

Military Parade, 1/99-2/95, pp. 10-11 (5164).

2/95

On a recent visit to the U.S., Ukrainian President Leonid Kuchma discussed a possible \$700 billion [sic] grant to ASSO-UNITI for the "Ariadna" space program.

Zenon Starchenko, *Khreshchatyk* (Kiev), 1/20/95, p. 2; in JPRS-TAC-95-001, 2/14/95, pp. 50-51 (5065).

3/31/95

In exchange for Kiev's promise to adhere to MTCR guidelines, U.S. Secretary of Defense William Perry agrees to allow Ukraine to offer its space-launch services for commercial U.S. payloads. In discussions with Ukrainian President Leonid Kuchma and Ukrainian defense officials, Perry agreed not to build a "monitoring fence" around a defunct SS-24 production complex in Pavlograd. Perry says that the decommissioning of Ukraine's 176 SS-24 and SS-19 ICBMs is proceeding ahead of schedule, and that Ukraine should be a non-nuclear state in about 18 months. The U.S. plans to give Ukraine an additional \$20 million for missile disarmament. Ukraine is attempting to convert its production capability from ICBMs to SLVs. Perry says that Ukraine's project to sell SS-24 missiles as converted space launch boosters needs to be discussed further because it could pose a potential proliferation threat.

Bill Gertz, *Washington Times*, 4/1/95, p. A2 (5031).

4/2/95

U.S. Secretary of Defense William Perry tells a press conference "Ukraine works consistently for the cause of disarmament and peace. Being present at the process of taking an SS-19 strategic nuclear missile off combat duty at the Prevomaisk Division, I again satisfied myself that Ukraine is a serious partner that does not use words lightly." Commenting on Ukraine's possible involvement in international space programs, Ukrainian Parliamentary Speaker Oleksandr Moroz says that Ukraine has the necessary infrastructure for a space program and that "Ukrainian access to space launches would boost the conversion process."

Itar-Tass (Moscow), 3/31/95; in FBIS-SOV-95-063, 3/31/95 (4989). Radio Ukraine World Service (Kiev), 4/2/95; in FBIS-SOV-95-063, 4/2/95 (4989).

5/95

In 7/95, the U.S. will provide Ukraine with a draft version of a U.S.-Ukraine space-launch accord. A final round of discussions will probably take place in the fall of 1995.

Space News, 5/8/95-5/14/95, p. 2 (4986). Warren Ferster and Peter B. de Selding, Space News, 5/22/95-5/28/95, p. 3 (5241).

UNITED STATES WITH UNITED ARAB EMIRATES

3/95

The UAE considers the McDonnell Douglas Harpoon Block 1G and the Aerospatiale MM-40 Block 2 Exocet missiles to equip its ASW frigates for their long-range SSM requirement. The Hughes Standard Missile SM-2 Block III and the Eurosam Aster ED are being considered for the UAE's air defense requirement.

James Bruce, Jane's Defence Weekly, 3/4/95, p. 8 (4977).

UNITED STATES WITH UNITED KINGDOM

5/95

The U.S. and the U.K. recently completed a joint exercise which envisioned a scenario, in 2007, to test the U.K.'s strategy and doctrine for missile defense. The U.K. is spending 5 million pounds on a study of missile

defenses. The review should be complete in approximately 18 months.

Robert Holzer, Defense News, 5/8/95-5/14/95, p. 12 (5058). Christopher Bellamy, Independent, 5/23/95 (5058).

YEMEN

5/27/95

A fire in the Yemeni port city of Aden causes a series of explosions at an ammunition and missile depot. The fire causes numerous missiles to launch and then fall on several sections of the city. The missiles were not armed and so did not explode on impact. The cause of the fire remains unclear.

Radio Monte Carlo (Paris), 5/27/95; in FBIS-NES-95-103, 5/27/95 (5243).

YUGOSLAVIA

INTERNAL DEVELOPMENTS

2/11/95

An explosion at the only solid-propellant factory in Yugoslavia may delay full-scale rocket production for several months. The factory produces propellant for unguided air-to-ground rockets and multiple rocket launcher ammunition.

Zoran Kusovac, Jane's Defence Weekly, 3/4/95, p. 8 (5076).

5/95

The "Krusik" Department for Military Equipment Manufacturing, which produces Air Force and Air Defense rocket missiles, is one of the largest suppliers to the Army of Yugoslavia.

Jovan Zaric, Borba (Belgrade), 5/15/95, p. 6; in FBIS-EEU-95-099, 5/15/95 (5073).