

BALLISTIC, CRUISE MISSILE, AND MISSILE DEFENSE SYSTEMS: TRADE AND SIGNIFICANT DEVELOPMENTS, NOVEMBER 1995-JANUARY 1996

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OVERVIEW

The acquisition, development, and deployment activities of **India** and **Iraq** dominated the missile proliferation headlines between November 1995 and January 1996. Speculation over **India's** potential stationing of nuclear-capable missiles along its border with **Pakistan** intensified due to reports that the 150 km-range Prithvi-1 SSM was nearing deployment. This was sustained by **India's** Bharatiya Janata Party (BJP), which pressured Prime Minister Narasimha Rao's ruling Congress Party to establish a strong position on defense issues—including the testing and deployment of the Prithvi SSM—in the run-up to the country's general elections in April and May. The successful test-flight of a 250 km-range Prithvi-2 SSM at the Defense Research and Development Organization's (DRDO) Interim Test Range did little to quell this conjecture. Although Islamabad described the test of this "**Pakistan-specific**" missile as an ominous development that will contribute to instability in the region, New Delhi claimed that **Pakistani** and international criticism of the trial was an overreaction. **India's** missile program also progressed with the successful test-flight of a Trishul anti-aircraft SAM; the Trishul might also have an anti-missile capability because of its short reaction time between target detection and launch.

In the **Middle East**, **Iraq** persevered with its efforts to acquire U.N.-proscribed, missile-related components and manufacturing technology from companies in **Europe**. Baghdad's illicit procurement strategy was typified by the interception in **Jordan** of an estimated \$25 million shipment of 115 **Russian-made** gyroscopes en route to **Iraq**. Although the **Russian** government denied vehemently any involvement in the shipment, U.S. Representative Curt Weldon requested an investigation by the Clinton administration to determine whether Moscow had violated its membership in the Missile Technology Control Regime (MTCR). Inside **Iraq**, UNSCOM (United Nations Special Commission in Iraq) reported that it could only account for 70 of the engines from the 80 Scud-type propulsion systems that **Iraq** produced before the Gulf War (53 of which are now inoperable). In light of these developments, UNSCOM Chief Rolf Ekeus asserted that **Iraq's** declarations regarding its missile program remain incomplete and inaccurate. Indeed, an **Israel** Defense Force (IDF) report asserted that **Iraq's** arsenal will probably include 10 Scud launchers and approximately 150 Scud missiles by the year 2000.

In reaction to the perceived missile threat from **Iraq** and other states in the Middle East, the **United States** agreed to jointly fund **Israel's** Arrow-2 ATBM system for an additional five years; the **United States** and **Israel** will contribute \$200 and \$300 million respectively. U.S.-**Israeli** cooperation in the missile defense field is scheduled to include a boost-phase-intercept (BPI) element in the near future, which envisages the use of interceptor missiles mounted on board UAVs and/or manned aircraft to shoot down enemy ballistic missiles in their boost phase. **Cyprus** also announced that it was contemplating the acquisition of ATBM and other missile systems in response to the Clinton administration's decision to provide **Turkey** with 160 km-range Army Tactical Missile Systems (ATACMS). The White House defended the transfer by citing **Turkey's** proximity to potentially hostile states such as **Iran** and **Iraq**, while the U.S. State Department claimed ATACMS would not be used against **Cyprus** because the transfer included significant contractual constraints to restrict such usage.

Developments elsewhere also illustrated the growing saliency of missile defenses. Despite **China's** publication of a "White Paper on Arms Control and Disarmament," in which the nuclear powers were warned against selling "guided missile defense systems" to **China's** neighbors, several East Asian nations demonstrated their increasing commitment to the acquisition of missile defenses. The **Japanese** Defense Agency (JDA) allocated \$2.85 million for concept studies on the research and development of a theater missile defense (TMD) system with the **United States**. As a hedge against the perceived missile threat from **North Korea**, **South Korea** was eyeing the **Russian** S-300 air-defense system. **Taiwan** also forged ahead with its deployment of the indigenously-produced Sky Bow-1 SAM system and the development of its successor, the Sky Bow-2.

In the **United States**, the Republican-controlled Congress took issue with a CIA estimate that downplayed the potential threat posed to North America by **North Korean** and **Iranian** ballistic missile programs. Republican critics characterized the estimate as a politically-motivated ploy by the White House to undermine support for a national missile defense system. Meanwhile, the Clinton administration engaged Pyongyang in talks aimed

at ending **North Korean** missile exports. The administration also continued in its dialogue with Seoul regarding **South Korea's** desire to abrogate its agreement with the **United States** to refrain from developing missiles with ranges exceeding 180 km and its possible membership in the **MTCR**.

Wyn Bowen and Holly Porteous

NOTE:

A date marked with an "" indicates that an event was reported on that date; a date without an "*" is the date when an event actually occurred.*

*The numbers listed in parentheses following the bibliographic references refer to the identification number of the document in the CNS Missile 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.*

AFGHANISTAN

AFGHANISTAN WITH TAJIKISTAN

12/5/95

Zafar Saidov, press secretary to the Tajik president, says his government told Darko Silovic, the head of the U.N. Observer Mission in Dushanbe, that Tajik border bases have been bombarded with “jet missiles” from Afghan territory almost every day since 12/1/95.

Interfax (Moscow), 12/5/95; in FBIS-SOV-95-233, 12/5/95 (5711).

ARGENTINA

ARGENTINA WITH CHILE

11/5/95

Argentine Defense Minister Oscar Camilion says Argentina and Chile have conducted high-level consultations on military issues such as Chile’s Rayo missile and Argentina’s Condor missile. Camilion says Argentina has stopped producing the 160 km-range Alacran and the 600 km-range Condor missiles.

Patricio Gonzalez, *El Mercurio* (Santiago), 11/6/95, p. C10; in FBIS-LAT-95-223, 11/6/95 (5700).

AUSTRALIA

AUSTRALIA WITH RUSSIA

1/96

Russia’s Scientific Technical Complex (STC) and Australia Submarine Engineering agree to conduct a feasibility study on establishing a commercial launch service for low-earth-orbit (LEO) satellites at the Woomera Rocket Range in South Australia. The service would use Russian Start

boosters—derived from former Soviet S-25 ICBMs—to launch 600 kg commercial and scientific payloads. Australia Submarine Engineering would be responsible for the launch support equipment. Although STC would provide initial program support, the technology involved would eventually be transferred to Australia Submarine Engineering. The LEO satellite launch program would become part of the Australian Space Launch Service, which may commence in 1997. The Russian Cosmos Group has also approached Australian companies to discuss launching Start rockets from Woomera or an alternative site in northern Australia.

Flight International, 1/24/96-1/30/96, p. 22 (5839).

AUSTRIA

AUSTRIA WITH IRAQ, JORDAN, AND RUSSIA

11/95

Jordan intercepts a shipment of 115 Russian-made gyroscopes and accelerometers en route to Iraq, which may have been arranged by Austrian middlemen. According to “well informed sources,” the components are designed for use in long-range missiles, although they could also be used in medium-range missiles to obtain greater accuracy. It is not known whether the items were intended for the SSM which Iraq is attempting to derive from SA-2 SAM technology.

Alan George, *Flight International*, 1/3/96-1/9/96, p. 17 (5909).

BELARUS

BELARUS WITH RUSSIA

Early 12/95

Belarusian President Alyaksandr Lukashenka says that while Russian missile divisions are being removed from his

country ahead of schedule, two missile divisions and 18 long-range nuclear missiles remain in Belarus. According to Igor Sergeev, commander of Russia’s strategic missile forces, Moscow has withdrawn 71 of 89 missiles and seven of nine missile divisions from Belarus. Sergeev says four of the missile regiments that have already been withdrawn from Belarus are now in combat service in Russia. Moscow’s remaining strategic missiles in Belarus will be withdrawn by 9/96.

Interfax (Moscow), 12/8/95; in FBIS-SOV-95-237, 12/8/95 (5876). Interfax (Moscow), 12/9/95; in FBIS-SOV-95-237, 12/9/95 (5876).

BELARUS WITH SUDAN

11/20/95*

A transport plane carrying Belarusian air-to-surface missiles departs for Sudan from Brest.

Informatsionnoye Agentstvo Ekho Moskv (Moscow), 11/20/95; in FBIS-SOV-95-223, 11/20/95 (5697).

BELGIUM

BELGIUM WITH IRAQ, SOUTH AFRICA, UNITED KINGDOM, AND UNITED STATES

1/22/96

A South African court decides that Paul Grecian, a U.K. arms dealer wanted in the U.S. on charges of supplying Iraq with weapons material prior to the 1991 Gulf War, will face an extradition hearing on 2/16/96. Grecian’s application for bail was denied on 12/22/95. Interpol agents apprehended the former British spy on a U.S. warrant when he arrived in South Africa for a vacation with his fiancée. Grecian faces a possible 25 year jail term in the U.S. for committing fraud, perjury, and trading U.S. artillery fuses to Iraq. In 11/95, Grecian was cleared of similar charges in the U.K. after the British government admitted it had approved his actions in return for data on “Iraq’s war plans.” According to the U.S. charges, Grecian and his company Ordnance Technology Ltd.

agreed to supply Iraq, in the late 1980s, with a facility capable of manufacturing 600,000 artillery fuses per year. Grecian is also accused of acquiring fuse components for Iraq from the U.S. firm Rexon by fraudulently identifying Jordan as the end-user. Grecian also collaborated previously with the Belgian firm Space Research Corporation, which assisted Iraq in the construction of a supergun that was potentially capable of firing a projectile into space. Space Research Corporation terminated all of its contracts with Baghdad in 1990 following the murder of its chief executive in Belgium.

Ingeborg Lichtenberg, *Washington Post*, 1/23/96, p. A9 (5935).

BULGARIA

INTERNAL DEVELOPMENTS

11/21/95

The Bulgarian Government publishes the "Foreign Trade in Arms and in Potential Dual-Use Goods and Technologies Control Act" in its *Official Gazette*. The new export control act is designed to regulate Bulgaria's trade in goods and technology that could be used in the "development, production, processing, design, control, maintenance, storage, or proliferation of chemical, biological, and nuclear weapons," or in the "design, production, maintenance or storage of missiles" capable of delivering weapons of mass destruction. Foreign trade is subject to control in order to protect "the national security and external interests of Bulgaria," to build "international confidence and stability," and to honor Bulgaria's "international commitments." The act obliges all entities trading in controlled items to "keep a separate register of any transactions which are conducted" and to inform "the competent public authorities" if there is a chance that dual-use goods and technologies could be put to a proscribed end-use. The act also stipulates that arms import or export contracts must include "end-use" guarantees. Violators of the new act will be impris-

oned for a period of no less than five years. Fines of up to 500,000 leva can also be imposed. The act will take effect in 1/96 and falls under the jurisdiction of the Council of Ministers, which will establish implementation regulations by 2/96.

Bulgarian Business News (Sofia), 12/4/95-12/10/95, 12/11/95-12/17/95; in FBIS-EEU-96-012, 1/18/96 (5886).

BULGARIA WITH PERU

1/8/96*

Bulgaria provides Peru with 288 missiles "with a range of 20 km" and "10 missile launching pads."

EFE (Madrid), 1/8/96; in FBIS-LAT-96-008, 1/8/96 (5670).

CANADA

CANADA WITH CHILE, MALAYSIA, MAURITIUS, PHILIPPINES, AND VIETNAM

12/18/96*

Rear Admiral Jorge Swett Brown, director of the Chilean Navy's Astilleros y Maestranzas de la Armada (ASMAR) shipyard, says ASMAR's Guardian class coastal defense vessel will be marketed to Asia-Pacific countries such as Malaysia, Mauritius, the Philippines, and Vietnam. ASMAR developed the Guardian class vessel with the Western Canada Marine Group. The Guardian vessel can be equipped with various missile systems.

David Pugliese, *Defense News*, 12/18/95-12/24/95, p. 8 (5860).

CHILE

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CYPRUS

CYPRUS WITH TURKEY AND UNITED STATES

12/19/95*

Cyprus registers a complaint with the State Department over the U.S. sale of Army Tactical Missile Systems (ATACMS) to Turkey and requests guarantees from Washington that the missiles will not be used against Cyprus. Nicholas Burns, spokesman for the State Department, says the ATACMS agreement with Turkey includes "substantial contractual restrictions" which limit such usage.

Reuter, 12/19/95; in Executive News Service, 12/20/95 (5840). Charlie Kharalambous, *Cyprus Mail* (Nicosia), 12/28/95, p. 3; in FBIS-TAC-96-002, 12/28/95 (5840).

12/28/95*

Cyprus contemplates purchasing anti-missile systems and "multimissile systems with improved strike capability" to defend against Turkey's U.S.-supplied ATACMS.

Reuter, 12/19/95; in Executive News Service, 12/20/95 (5840). Charlie Kharalambous, *Cyprus Mail* (Nicosia), 12/28/95, p. 3; in FBIS-TAC-96-002, 12/28/95 (5840).

EASTERN EUROPE

EASTERN EUROPE WITH FRANCE, GERMANY, AND IRAQ

1/3/96*

U.N. officials assert that companies from Eastern Europe, France, and Germany are continuing to supply Iraq with proscribed military items. U.S. sources claim that since 1990, European firms have supplied Iraq with missile guidance systems, advanced machine tools, and a specialized industrial furnace used to manufacture missile components for Scud-type missiles. Iraq's procurement effort appears to be connected with its Ababil-100 project to

produce 100-150 km-range SSMs.

James Bruce, *Jane's Defence Weekly*, 1/3/96, pp. 15, 18-19 (5847).

ECUADOR

ECUADOR WITH PERU

12/16/95

Ecuador's State Communications National Secretariat (Senacom) claims Peru is involved in a major campaign to purchase missiles and other weapon systems.

EFE (Madrid), 12/16/95; in FBIS-LAT-95-243, 12/16/95 (5856).

ECUADOR WITH UNITED KINGDOM

1/19/96*

A Peruvian military source says Ecuador is negotiating for acquisition of two U.K.-manufactured Leander anti-missile frigates. The 2,500 ton frigates have a maximum speed of 27 knots and are equipped with "missile systems and the newest weapons."

EFE (Madrid), 1/19/96; in FBIS-LAT-96-014, 1/19/96 (5745).

EGYPT

EGYPT WITH UNITED STATES

11/95

Officials from the U.S.'s Predator unmanned aerial vehicle (UAV) program demonstrate the vehicle's capabilities to Egyptian military officials at Fort Huachuca in Arizona.

David A. Fulghum, *Aviation Week & Space Technology*, 11/13/95, pp. 72-73 (5742).

FRANCE

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FRANCE WITH ITALY AND UNITED KINGDOM

12/21/95

France and Italy sign an agreement to initiate pre-production of the Future Surface-to-Air Family (FSAF) of missiles. The FSAF missiles will form the technological basis of the Principal Anti-Air Missile System (PAAMS) to be fitted on-board the Horizon frigates which the U.K., France, and Italy intend to build. A \$1 billion contract for FSAF production may be granted to "prime contractor" EUROSAM of France by 7/96. The FSAF agreement includes the program's Surface-Air Anti-Missile weapon, which is designed for short-range naval air defense, and the Sol-Air Moyenne Portee/Terre, which is a medium-range, ground-launched system designed to replace the U.S.-manufactured Hawk missile. Both of these FSAF components will employ two versions of Aerospatiale's Aster missile: the single-stage Aster-15; and the medium-range Aster-30. Two successful test firings of the Aster missile in late 11/95 and early 12/95 removed the final obstacle blocking the PAAMS program. Sources indicate that the tests assured the U.K.'s Ministry of Defense that the Aster missile met the "performance criteria" established by London as a prerequisite for British participation in PAAMS.

Giovanni de Briganti, *Defense News*, 1/8/96, p. 10 (5930). Giovanni de Briganti, *Defense News*, 12/4/95-12/10/95, p. 18 (5930). *Defense News*, 12/18/95-12/24/95, p. 2 (5694). Giovanni de Briganti, *Defense News*, 11/13/95-11/19/95, p. 42 (5694).

FRANCE WITH KUWAIT

1/3/96*

France's Defense Minister Charles Millon intends to discuss the potential French sale to Kuwait of between two to four "heavily

armed" 2,000 ton corvettes. The Kuwaiti Navy wants to arm the corvettes with missiles such as the MM-40 Exocet ASM.

Giovanni de Briganti, *Defense News*, 11/6/95, p. 6, (5888). Jacques Isnard, *Le Monde* (Paris), 1/13/96, p. 5; in FBIS-TAC-96-001, 1/13/96 (5888). Alexandra Schwartzbrod, *Liberation* (Paris), 1/6/96, p. 18; in FBIS-TAC-96-001, 1/6/96 (5888).

1/14/96-1/15/96

Defense Minister Millon offers to provide regional satellite imagery to Kuwait if it purchases \$200 million worth of ASMs from France.

Space News, 1/22/96-1/28/96, p. 2 (5903).

FRANCE WITH MALAYSIA

12/95

France's Aerospatiale negotiates the creation of a local joint venture to provide support for the MM-38 and MM-40 Exocet ASMs that are operated by the Royal Malaysian Navy and other states in Southeast Asia. Aerospatiale has already transferred support equipment to the Lumut naval dockyard in Malaysia.

Flight International, 12/13/95-12/19/95, p. 24 (5923).

FRANCE WITH RUSSIA

12/6/95*

Russia's Moscow Aviation Institute and France's Aerospatiale are collaborating to manufacture an "experimental variable-thrust supersonic combustion ramjet (scramjet) engine." The new scramjet is designed to have applications in the civilian and military fields, including aircraft, spacecraft, and weapons programs. Testing of the scramjet engine is scheduled to begin by the end of 1997.

Julian Moxon, *Flight International*, 12/6/95-12/12/95 (5743).

1/15/96*

France's Arianespace is considering the joint marketing of Russian SL-4 Soyuz and SL-6 Molniya SLVs with the Samara TsSKB design bureau. The SL-4 can place seven ton payloads into low orbits and the SL-6 is capable of delivering one ton payloads to "high or elliptical orbits." France's Arianespace and Aerospatiale previously proposed working with TsSKB to launch

Loral Globalstar spacecraft.

Craig Covault, *Aviation Week & Space Technology*, 1/15/96, p. 26 (5897).

FRANCE WITH TAIWAN

11/13/95*

Taiwan receives two samples of the enhanced version of the Aerospatiale AM-39 Exocet air-launched anti-ship missile from France. At least one of these missiles is test-fired by a Taiwanese AT-3 light attack/trainer jet. Taiwan employs the U.S.-designed Harpoon ship-to-ship missile, but has not been successful in purchasing Harpoon air-to-surface missiles from the U.S.

Paul Proctor, *Aviation Week & Space Technology*, 11/13/95, p. 13 (5833).

FRANCE WITH UNITED ARAB EMIRATES

11/23/95

French Defense Minister Charles Millon announces his government's intention to sell the UAE up to four multi-purpose frigates equipped with phased array radars and vertically launched air-defense and anti-ship missiles.

Giovanni de Briganti, *Defense News*, 11/6/95, p. 6, (5888).

11/25/95*

The French company Matra is competing to fulfill the UAE's stand-off missile requirement with a derivative of its Apache missile.

Jane's Defence Weekly, 11/25/95, p. 16 (5669).

1/96

France and the UAE discuss a contract for the latter's purchase of "between two and four" 3,600 ton missile-launching Lafayette class frigates.

Giovanni de Briganti, *Defense News*, 11/6/95, p. 6, (5888). Jacques Isnard, *Le Monde* (Paris), 1/13/96, p. 5; in FBIS-TAC-96-001, 1/13/96 (5888).

GERMANY

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GERMANY WITH UNITED NATIONS

12/95

Germany announces its decision to withdraw air support from UNSCOM in Iraq. Bonn has been operating three CH-53 helicopters to allow U.N. inspectors to take high-resolution aerial photographs in Iraq and to transport them on surprise inspections of suspected weapon sites. Germany has also been operating two C-160 cargo planes to transport UNSCOM's monitoring equipment and personnel between Iraq and Bahrain. Germany says the decision was based on budgetary and operational considerations.

R. Jeffrey Smith, *Washington Post*, 12/19/95, p. A29, (5866).

INDIA

INTERNAL DEVELOPMENTS

Early 11/95

Krishan Lal Sharma, a spokesman for the Bharatiya Janata Party (BJP), says India should "go ahead speedily with our missile programme" because of the threat posed by Pakistan. Further demands for the deployment of indigenously produced missiles are expected during the BJP's three-day convention in Bombay which begins on 11/10/95. The BJP has criticized the Rao government for acquiescing to U.S. pressure to cap India's missile development program. The BJP favors initiating serial production of the Prithvi missile, fielding the Agni IRBM, and developing an Agni-2 missile.

Paul Iredale, *Reuter*, 11/6/95; in *Executive News Service*, 11/7/95 (5685). *Hindu*, 11/18/95, p. 4 (5685).

11/4/95

India conducts a successful test of the Trishul short-range SAM at the Interim Test Range in Chandipur, Orissa. The Trishul's 29th test is conducted in the "configuration" of the army; navy and air force versions are also being developed. The missile is launched from a Trishul combat vehicle (TCV) fitted with tracking and sur-

veillance equipment. India's Defense Research and Development Organisation (DRDO) heads the consortium responsible for developing the Trishul surface-to-air (SAM), which is an element of India's Integrated Guided Missile Development Programme (IGMDP).

All India Radio Network (Delhi), 11/5/95; in FBIS-NES-95-215, 11/5/95 (5683). *Hindu*, 11/11/95, p. 2 (5683).

11/8/95*

India will soon deploy the 150 km-range Prithvi surface-to-surface (SSM), according to anonymous diplomatic sources. Indian government officials assert the Indian Army will field Prithvi as a "tactical battlefield missile."

Flight International, 11/8/95-11/14/95, p. 20 (5842).

11/29/95

Muthulu Mallikarjun, Indian deputy defense minister, tells the lower house of the Indian Parliament that it will no longer be "privy" to details concerning the Agni, Prithvi, Trishul, and Akash missile programs. Indian legislators will, in the future, be denied access to financial and other information associated with the four missile programs. Mallikarjun says the long-range Agni missile program should be free from both international and parliamentary oversight. According to Indian defense sources, the government has allocated \$16.6 million for an additional five Agni tests. Indian defense sources also say the Trishul SAM has entered its final development stage.

Vivek Raghuvanshi, *Defense News*, 12/11/95-12/17/95, pp. 5, 44 (5703).

12/5/95

An Indian Army source says the Akash SAM will begin user trials in early 1996. The medium-range Akash incorporates an air-breathing ramjet engine and can hit targets at distances of up to 25 km with a 55 kg warhead.

Vivek Raghuvanshi, *Defense News*, 12/11/95-12/17/95, pp. 5, 44 (5703).

12/9/95

Dr. Abdul Kalam, scientific adviser to the Indian ministry of defense, tells journalists that the Prithvi SSM has been accepted

by the army and India is "going ahead with the next step." Kalam also tells the 14th national conference on internal combustion that DRDO plans, over the next ten years (1995-2005), to make India self-reliant in the production of 70 percent of all the components used in several weapon systems.

Hindu (Madras), 12/9/95, p. 5; in FBIS-NES-95-238, 12/9/95 (5737).

12/11/95

A source at the DRDO's Advanced Development Establishment (ADE) says ADE has constructed three prototypes of the Nishant UAV. An additional five are scheduled to be manufactured within the next 12 months. In 1995, ADE conducted five Nishant flight tests. According to ADE scientists, the Nishant surveillance UAV will be capable of carrying a 45 kg payload at a maximum altitude of 4 km and at a cruising speed of 140 km/h. The Nishant—which costs approximately \$50,000 to manufacture—is made primarily from a fiber-strengthened glass which reduces the UAV's chances of being detected by radar. ADE has also developed the Lakshya pilotless target vehicle for SAM and AAM training. The Lakshya will be deployed eventually with all three branches of the Indian military. The Bangalore-based Hindustan Aeronautics Ltd. (HAL) has already initiated low-rate production of the Lakshya. Although the Lakshya model developed for the Indian military can be configured to deliver ordnance, the export model is designed purely as a target aircraft. The Lakshya can be either ship- or ground-launched "using a rocket powered in flight by a turbojet engine." One Lakshya squadron costs \$4.66 million and consists of six UAVs, a ground control system, and affiliated expendables. Scientists at ADE estimate that India's indigenously developed Nishant and Lakshya UAVs will move into "prototype and serial production" in mid-1996.

Vivek Raghuvanshi, *Defense News*, 12/18/95-12/24/95, p. 12 (5739).

1/16/96

India cancels a Prithvi SSM test for undisclosed reasons. The Indian Defense Ministry states that the next launch will be conducted at the Interim Test Range at Chandipur in Orissa. The Prithvi has been

tested 14 times to date. With Indian general elections likely to be held in 4/96, Prime Minister Narasimha Rao is under pressure from the BJP to establish a strong position on defense issues, including the testing and deployment of the Prithvi SSM. A senior defense official says serial production of the Prithvi is already in progress.

Charles Aldinger, Reuter, 1/16/96; in Executive News Service, 1/16/96 (5705). Jawed Naqvi, Reuter, 1/16/96; in Executive News Service, 1/16/96 (5705); All India Radio Network (Delhi), 1/17/96; in FBIS-NES-96-011, 1/17/96 (5705).

1/27/96

India tests the Prithvi-2 SSM at DRDO's Interim Test Range at Chandipur. The Prithvi-2 is tracked by "a network of three radars, three optical tracking telescopes, three telemetry stations, and a naval ship." The tracking ship confirms the Prithvi hit its predetermined target approximately 250 km from its launch point near the Bay of Bengal. According to an Indian defense official, India intends to arm the Prithvi SSM either with cluster munitions for destroying airstrips, or with fuel air explosives to ensure "maximum destruction" of the target area.

Farhan Bokhari and Vivek Raghuvanshi, *Defense News*, 2/5/96-2/11/96, p. 18 (5838).

1/28/96*

DRDO rectifies problems with the Trishul SAM's guidance system. The Trishul uses a radar guidance system to home in on targets, including low-flying aircraft, at distances of up to 9 km. The Trishul might also have an anti-missile capability because of its short reaction time of between six to eight seconds from target detection to launch. The Indian Army will probably commence Trishul user trials in 3/96.

All India Radio Network (Delhi), 1/28/96; in FBIS-NES-96-020, 1/28/96 (5706).

INDIA WITH PAKISTAN

1/27/96

Pakistan's Foreign Secretary Najmuddin Sheikh says India's test of the Prithvi SSM is an ominous development in the region and Pakistan will be forced to respond by taking the necessary security measures.

Radio Pakistan Network (Islamabad), 1/28/96; in FBIS-NES-96-020, 1/28/96 (5707).

1/28/96

Mian Raza Rabbani, Pakistani minister for law and parliamentary affairs, tells Pakistan's Parliament that India's Prithvi test contributes to instability in South Asia. Rabbani adds that Islamabad can justifiably consider deploying anti-missile countermeasures in response to the Pakistan-specific Prithvi SSM. Raja Mohammad Zafarul Haq, leader of the Pakistani opposition in the House, also asserts that Islamabad can justifiably act to bolster the nation's security.

Radio Pakistan Network (Islamabad), 1/28/96; in FBIS-NES-96-020, 1/28/96 (5707). Radio Pakistan Overseas Service (Islamabad), 1/28/96; in FBIS-NES-96-020, 1/28/96 (5707).

1/31/96

Pakistani President Farooq Ahmed Leghari warns that India's 1/27/96 test of the Prithvi-2 SSM creates a new "threat perception for Pakistan," and Islamabad will take the necessary measures to ensure its security. India responds to Pakistani and international criticism of its Prithvi test by calling it an "overreaction." One Indian defense official responds to the criticism by saying that nobody would "place a nuclear warhead on a 250 km missile" because the "risk of damage to the area of origin" is too great.

Farhan Bokhari and Vivek Raghuvanshi, *Defense News*, 2/5/96-2/11/96, p. 18 (5838).

INDIA WITH PAKISTAN AND UNITED STATES

1/16/96

The U.S. asks India to refrain from deploying nuclear-capable Prithvi SSMs because it would foster further tensions between Pakistan and India. In 5/94, Indian Prime Minister Narasimha Rao postponed a Prithvi test-launch because of similar U.S. anxieties.

Charles Aldinger, Reuter, 1/16/96; in Executive News Service, 1/16/96 (5705). All India Radio Network (Delhi), 1/17/96; in FBIS-NES-96-011, 1/17/96 (5705).

11/29/95

U.S. Under Secretary of State Lynn Davis tells a news conference that American supplies of sophisticated military equipment to Pakistan under the Brown amendment

will help to prevent missile deployments by both Pakistan and India.

Hindu (International Edition), 12/9/95, p. 4 (5748).

1/30/96

Nicholas Burns, spokesman for the U.S. State Department, urges India and Pakistan to restrain themselves by warning that both countries' deployment and purchase of ballistic missiles would destabilize the region. Burns says the U.S. continues "to encourage both governments not to deploy or test ballistic missiles."

Farhan Bokhari and Vivek Raghuvanshi, *Defense News*, 2/5/96-2/11/96, p. 18 (5838).

INDIA WITH RUSSIA

4/7/95

An anonymous Russian official offers to transfer 45 mobile Topol-M nuclear-capable ICBMs to India over the next 10 years. The proposed \$3 billion transfer was made to General Sundarji, India's retired chief of army staff, at an "international conference on strategic stability" in Virginia, U.S. The Russian newspaper *Pravda* says it acquired copies of two classified documents written by the Russian delegate to the conference who reportedly spoke with Sundarji during a private meeting. Russia will reportedly supply the Topol ICBMs with the related communication and control equipment, maintenance and training, and spare parts; nuclear warheads will not be included. Valery Pogrebekov, a spokesman for Russia's Rosvoorouzhnie, characterizes the report as "rubbish." He adds that Rosvoorouzhnie does not have export licenses for Topol-M ICBMs and has no plans to transfer them.

Vladimir Radyuhin, *Hindu* (online), 12/16/95, p. 14 (5874). *Muslim* (Islamabad), 12/18/95, pp. 1, 8; in FBIS-TAC-96-001, 12/18/9 (5874). Aleksey Varlamov and Yevgeniy Menshikov, *Komsomolskaya Pravda*, 12/15/95, p. 10 (5882).

11/24/95

Admiral V.S. Shekhawat, India's naval chief, says the Indian Navy is awaiting a Russian delivery of anti-ship missiles (ASMs) for the indigenously manufactured Delhi and Mysore destroyers. The 6,200 ton Delhi destroyer is scheduled to enter service in 1997, 12 months later than planned. India's Mysore and Bombay de-

stroyers are scheduled to enter service after the Delhi.

Telegraph (Calcutta), 11/25/95, p. 6; in FBIS-NES-95-234, 11/25/95 (5749). Uday Bhaskar, *Times of India* (Bombay), 12/2/95, p. 10; in FBIS-NES-95-234, 12/2/95 (5749).

12/16/95

India will probably sign a defense contract with Russia "during the next few weeks," which will include the transfer of Russian S-300 and Tunguska anti-aircraft missile systems. The contract is estimated to be worth in excess of \$1 billion. Experts forecast that Russian defense sales to India may total as much as \$8-10 billion in the long term.

Maksim Yusin, *Izvestiya* (Moscow), 12/16/95, p. 3; in FBIS-SOV-95-243, 12/16/95 (5740).

12/17/96

The Russian Embassy in Pakistan issues a press release saying that reports from "APP publications" regarding the alleged Russian proposal to transfer Topol-M ICBMs to India are "absolutely false." APP's story was derived from information distributed by the Press Trust of India which quoted *Pravda's* report.

Vladimir Radyuhin, *Hindu* (online), 12/16/95, p. 14 (5874). *Muslim* (Islamabad), 12/18/95, pp. 1, 8; in FBIS-TAC-96-001, 12/18/95 (5874).

Late 1996

Russia will send one of seven cryogenic rocket engines to India for incorporation into its Geostationary Launch Vehicle (GSLV). Russia requests that India pay for the engines in dollars rather than rupees as agreed previously. India plans to launch its first GSLV using a Russian engine in 1998 and may use indigenously developed cryogenic engines starting in the year 2000.

Flight International, 1/17/96-1/23/96, p. 17 (5922).

IRAN

INTERNAL DEVELOPMENTS

11/23/95-12/1/95

During the Saeqe-4 (Thunderbolt-4) military exercises "near the mouth of the Gulf,"

Iran launches a land-based cruise missile at a sea target close to the port of Jask. The launch is designed to test the first "advanced missile system" manufactured by Iran's navy. Units from Iran's navy, army, and revolution guards participate in the test.

Reuter, 11/29/95; in Executive News Service, 11/29/95 (5676). IRNA (Tehran), 11/25/95; in FBIS-NES-95-227, 11/25/95 (5676). IRNA (Tehran), 11/26/95; in FBIS-NES-95-227, 11/26/95 (5676). IRIB Television First Program Network (Tehran), 11/25/95; in FBIS-NES-95-227, 11/25/95 (5676).

12/21/95

Iran's Islamic Revolutionary Guards Corps (IRGC) begins missile and artillery defense exercises, code-named "Ya Aba 'Abdallah al-Husayn," at a location near Qom. IRGC Commander Major General Mohsen Reza'i says Iran has "rebuilt and renovated" its anti-aircraft missiles without foreign assistance. During the exercises, one missile identifies a target at a range of 270 km before shooting it down.

IRIB Television First Program Network (Tehran), 12/21/95; in FBIS-NES-95-245, 12/21/95 (5673).

12/23/95-12/26/95

The IRGC conducts the "Ra'd" (Thunder) missile maneuvers near Kharg Island in the northern area of the Persian Gulf. The maneuvers are designed to exhibit the "combat readiness" of the IRGC's missile and naval units. Colonel Parviz Qowski, deputy commander of the exercises, says the maneuvers constitute the first time that missile frigates and coastal missile units demonstrate operational coordination. Qowski says the maneuvers include: "a number of long-range missile frigates; dozens of fast missile frigates; dozens of heavy and medium weight combat and support frigates; four land-to-sea and defense missile units; and radar and monitoring sites." Rear Admiral Ahmadiyan, acting commander of the IRGC's naval forces, says Iranian frigates armed with long-range missile launchers can meet any challenge.

IRNA (Tehran), 12/26/95; in FBIS-NES-95-250, 12/26/95 (5919). IRNA (Tehran), 12/24/95; in FBIS-NES-95-247, 12/24/95 (5919). IRNA (Tehran), 12/22/95; in FBIS-NES-95-247, 12/22/95 (5919). IRIB Television First Program Network (Tehran), 12/26/95; in FBIS-NES-95-250, 12/26/95 (5919). IRNA (Tehran), 12/25/95; in FBIS-NES-95-250, 12/25/95 (5919). IRNA (Tehran) 12/24/95; in FBIS-NES-95-250, 12/24/95 (5919).

12/24/95

The IRGC opens its first "technical-engineering exhibit" in Tehran at which samples of "repaired or reconstructed" military hardware, including "missile production units," are displayed.

IRNA (Tehran), 12/26/95; in FBIS-NES-95-250, 12/26/95 (5919). IRNA (Tehran) 12/24/95; in FBIS-NES-95-250, 12/24/95 (5919).

12/24/95

Brigadier General Seyyed Rahim Safavi, IRGC acting commander-in-chief, says the corps has made considerable advances in the production of 500 km-range ballistic missiles and "Sum" missiles [SAMs] "capable of hitting targets within a range of 200 km."

IRNA (Tehran), 12/26/95; in FBIS-NES-95-250, 12/26/95 (5919). IRNA (Tehran), 12/25/95; in FBIS-NES-95-250, 12/25/95 (5919).

1/30/96

Iran test-fires a new, Chinese-made anti-ship missile in the northern Arabian Sea. The sea-skimming Chinese-made C-802 (YJ-2) anti-ship missile has a 15-120 km range and a 700 kg payload. Iran wants to deploy the C-802s on its five Chinese Huadong patrol ships and may purchase five more of the patrol ships from China. According to Vice Admiral Scott Redd, commander of the U.S. 5th Fleet, Iran has adapted "a significant number" of its ships for the new missile, the first ship-based cruise missile Iran has acquired. Redd adds that the C-802 adds a "new threat dimension" for ships operating in the Gulf. Iran has increased by threefold the number of surface-to-surface missiles (SSMs) deployed by its military, especially near the Strait of Hormuz. The SSMs are a threat because they can be difficult to locate. According to senior U.S. Navy officials, Iran is improving the integration of its naval capabilities, combining submarines, anti-ship missiles, mines, and anti-aircraft systems to constitute a threat to other Persian Gulf states and the U.S. Navy. These developments are taking place despite the fact that Iran's military acquisitions have decreased by two-thirds since 1992 due to economic hardship and U.S. pressure. Iran already possesses approximately 100 160 km-range CSS-3 'Seersucker' SSMs on eight to 10

mobile launchers and may add the more capable land-based C-802 from China to its arsenal. Iran has also deployed improved Hawk missiles, coastal cruise missiles, and MLRS on other islands in the Persian Gulf.

Washington Post, 1/31/96, p. A10 (5843). James R. Asker, *Aviation Week & Space Technology*, 2/5/96, p. 25 (5843). Sergey Viktorov, Voice of Russia World Service (Moscow), 2/1/96; in FBIS-SOV-96-023, 2/1/96 (5843). Voice Of The Islamic Republic of Iran (Tehran), 1/31/96; in FBIS-NES-96-022, 1/31/96 (5843). *Flight International*, 2/7/96-2/13/96, p. 17 (5843). *Wall Street Journal*, 1/31/96, p. 1 (5793). Philip Finnegan and Robert Holzer, *Defense News*, 11/27/95-12/3/95, p. 1 (5803).

IRAN WITH PRC

12/13/95-12/19/95*

China is supplying technical assistance to Iran's cruise missile development program, according to Middle East sources. The sources say China has provided Iran with missile navigation components, including global positioning system technology, information on propulsion techniques, and production equipment.

Flight International, 12/13/95-12/19/95, p. 14 (5752).

IRAN WITH RUSSIA

11/8/95

Russia reveals that it has shipped 94 "missiles or missile launchers" to Iran. Moscow submits this information to the U.N. Conventional Arms Register eight days after its publication on 10/31/95.

Washington Times, 12/2/95, p. A6 (5857).

IRAQ

INTERNAL DEVELOPMENTS

11/8/95

The U.N. Security Council extends trade sanctions against Baghdad because of a 10/95 report submitted by UNSCOM Chief Rolf Ekeus which asserts that Iraq ordered missile parts from abroad. Baghdad claims it produced the components indigenously.

Evelyn Leopold, Reuter, 11/8/95; in Executive News Service, 11/8/95 (5890).

11/16/95

Ekeus tells the Washington Institute for Near East Policy that Iraq "was known to be working on rockets" with ranges of 900 km, 2,000 km, and 3,000 km, by "exploiting a loophole in U.N. restrictions" that permits Iraq to conduct research and development on ballistic missiles.

Patrick Worsnip, Reuter, 11/16/95; in Executive News Service, 11/17/95 (5890).

11/28/95

The Iraqi News Agency is informed by Ekeus that UNSCOM has obtained new information regarding Iraq's missile capabilities. Ekeus also meets Iraqi Minister of Oil Lieutenant General 'Amir Muhammad Rashid and plans to meet with Iraqi Deputy Prime Minister Tariq 'Aziz.

INA (Baghdad), 11/28/95; in FBIS-NES-95-229, 11/28/95 (5701).

11/29/95

After a three-day visit to Baghdad, Ekeus says progress was made in talks with Iraqi officials. Ekeus says he is satisfied with the Iraqi government's cooperation in supplying information, although he adds that experts will need to examine and confirm this data.

INA (Baghdad), 11/28/95; in FBIS-NES-95-229, 11/28/95 (5701).

Early 12/95

Ekeus reports that UNSCOM can only account for 70 of the engines from the 80 Scud-type propulsion systems that Iraq produced before the Gulf War. Ekeus adds that 53 of these 80 engines are now inoperable. After briefing the U.N. Security Council, Ekeus tells reporters that Iraq's declarations regarding its missile program remain incomplete and unsatisfactory. He says that despite U.N. sanctions, Iraq has acquired some missile parts since the Gulf War of 1991 and UNSCOM has been forced to compare information from third countries with data recently provided by Baghdad. Ekeus adds that, despite pressure from some Iraqi officials for UNSCOM to finish its inspections as soon as possible, Iraqi Deputy Prime Minister Tariq 'Aziz told

him they should all work seriously and without time constraints.

R. Jeffrey Smith, *Washington Post*, 12/15/95, p. 30 (5914). *Washington Post*, 12/8/95, p. A44 (5914). Jack Redden, Reuter, 12/7/95; in Executive News Service, 12/8/95, (5908). Jack Redden, Reuter, 12/8/95; in Executive News Service, 12/12/95 (5908). Evelyn Leopold, Reuter, 12/5/95; in Executive News Service, 12/5/95 (5858).

12/10/95

U.N. Secretary General Boutros Boutros-Ghali says he is "quite positive" after talking with Tariq 'Aziz about Baghdad's clandestine weapons program. 'Aziz says he informed Boutros-Ghali of the work Iraq has done to "clarify most of the issues raised" since the defections of two senior Iraqi officials in 8/95.

Stephanie Nebehay, Reuter, 12/10/95; in Executive News Service, 12/10/95 (5849).

12/12/95

After a meeting with Tariq 'Aziz, Sergey Lavrov, chairman of the U.N. Security Council, says 'Aziz asked him to tell the council that Baghdad has instructed all of Iraq's government agencies to cooperate fully with UNSCOM.

Boris Sitnikov, Itar-Tass (Moscow), 12/13/95; in FBIS-SOV-95-239, 12/13/95 (5668).

12/21/95

Ambassador Ekeus exhibits to the U.N. Security Council one of several missile gyroscopes which UNSCOM retrieved from the Tigris River in Baghdad. It appears Iraq deposited the gyroscopes in the river to prevent their discovery.

Barbara Crossette, *New York Times*, 12/22/95, p. A6 (5677).

1/17/96*

An Israel Defense Forces (IDF) report asserts that Iraq's arsenal will include 10 Scud launchers and approximately 150 Scud missiles by the year 2000.

Alex Fishman, *Yedi'ot Aharonot* (Tel Aviv), 1/17/96, p. 21; in FBIS-NES-96-012, 1/17/96 (5667).

IRAQ WITH:

Austria, Jordan, and Russia, 137
Belgium, South Africa, United Kingdom, and United States, 137
Eastern Europe, France, and Germany, 138

IRAQ WITH JORDAN

12/95

A source from the National Supervision Department (NSD) of Iraq's Military Industrialization Organization denies allegations that it attempted to import missile components through Jordan in 11/95. The source says Baghdad declined the offer of a Jordanian broker to supply Iraq with missile guidance components in 1994, in mid-1995, and in 10/95. On 5/3/94, the NSD reportedly warned the broker not to attempt to sell these components to Iraq again. A copy of the 5/3/94 message was forwarded to UNSCOM. According to the source, the broker's offer was refused because of Iraq's commitment to U.N. sanctions.

Iraq Television Network (Baghdad), 12/8/95 ; in FBIS-NES-95-237, 12/8/95 (5907).

12/12/95

Following a meeting with Tariq 'Aziz, Iraqi deputy prime minister, Sergey Lavrov, chairman of the U.N. Security Council, says the issue of the Iraqi-bound missile parts confiscated in Jordan was not discussed during the meeting. 'Aziz tells journalists that allegations Iraq tried to import missile components through Jordan in 11/95 are unfounded.

Iraq Television Network (Baghdad), 12/8/95; in FBIS-NES-95-237, 12/8/95 (5907). Iraq Television Network (Baghdad), 12/12/95; in FBIS-NES-95-239, 12/12/95, (5907). Boris Sitnikov; Itar-Tass (Moscow), 12/13/95; in FBIS-SOV-95-239, 12/13/95 (5668).

12/27/95

Jordanian Foreign Minister Abdul-Karim Kabariti announces that Jordan recently intercepted a computerized milling machine en route to Iraq. The milling machine can be used to produce missile components. The machine was imported into Jordan by an Amman-based Iraqi front company. Kabariti says the seizure was made possible by the large quantity of documents which Iraq released to the U.N. following the defection of Husayn Kamil Hasan in 8/95. According to Kabariti, the documents revealed "the names of all the parties and companies cooperating with the Iraqi regime." He also asserts that many of the documents had not been cleared by the Iraqi

government.

Washington Times, 12/28/95, p. A13 (5859). *Al-Dustur* (Amman), 12/28/95, pp. 1, 16; in FBIS-TAC-96-001, 12/28/95 (5744).

IRAQ WITH JORDAN AND RUSSIA

11/10/95

A shipment of 115 Russian-made gyroscopes destined for Iraq leaves Moscow on a Royal Jordanian aircraft. Jordanian officials subsequently intercept the shipment in Amman. The components are transported in 30 crates marked as electrical equipment. The U.N. estimates the shipment to be worth in excess of \$25 million. According to documents obtained by the U.N., the missile parts were ordered by the Karama research center near Baghdad, where Iraq is developing missiles with ranges of up to 150 km. Although the gyroscopes may have been "designed for use in long-range intercontinental missiles," Baghdad claims they were to be used in the manufacture of short-range missiles. A Jordanian official says the components were imported by a Palestinian from Gaza who left Jordan in 9/95 or early 10/95. The Jordanian newspaper *Al-Bilad* identifies the importer as Weaam Gharbiyeh, a Palestinian who set up an import-export company in Amman after leaving Kuwait in 1990. Gharbiyeh is known to have ties with Saddam Hussein's regime and is now thought to be in Baghdad after leaving Amman in 9/95 or early 10/95. Other reports attribute the shipment to Gharbiyeh and an Iraqi businessman, 'Udayy 'Ujam, who resides in Jordan. Iraq blames the incident on a Jordanian businessman who tried to sell the prohibited items to Iraq on at least two previous occasions. U.N. officials describe Iraq's explanation as inaccurate. The Russian Ministry of Foreign Affairs denies any involvement in the deal. The interception illustrates how Baghdad is continuing to violate the U.N. embargo on virtually all trade with Iraq.

James Bruce, *Jane's Defence Weekly*, 1/3/96, p. 3 (5853). R. Jeffrey Smith, *Washington Post*, 12/15/95, p. A30 (5853). *Jordan Times* (Amman), 12/9/95, pp. 1, 7; in FBIS-NES-95-237, 12/9/95 (5908). *Al-Bilad* (Amman), 12/13/95, p. 1; in FBIS-NES-95-238, 12/13/95 (5908). Voice Of Iraqi People (clandestine), 12/20/95; in FBIS-NES-95-245, 12/20/95 (5908).

Early 12/95

A spokesman at the Russian Embassy in Washington says the missile guidance components intercepted in Jordan en route to Iraq in 11/95 "did not belong to Russia." According to U.S. and U.N. officials, this denial is not credible because the missile parts were designed for Russian long-range missiles, although they could also be modified for shorter range systems.

R. Jeffrey Smith, *Washington Post*, 12/15/95, p. 30 (5914).

12/9/95

The Russian Foreign Ministry denies reports that the Iraqi-bound shipment of missile components intercepted in Jordan originated in Russia. The ministry also emphasizes that Moscow complies with the U.N. sanctions on Iraq.

Jack Redden, *Reuter*, 12/8/95; in *Executive News Service*, 12/12/95 (5908). *Interfax* (Moscow), 12/9/95; in FBIS-SOV-95-237, 12/9/95 (5908).

12/9/95

Sergey Lavrov, chairman of the U.N. Security Council, says the Russian government has denied any involvement in the Iraqi-bound shipment of missile parts that was intercepted in Jordan.

Boris Sitnikov, *Itar-Tass* (Moscow), 12/13/95; in FBIS-SOV-95-239, 12/13/95 (5668).

IRAQ WITH JORDAN, RUSSIA, AND UNITED STATES

Early 1996

U.S. Representative Curt Weldon (R-PA), chairman of the House National Security military research and development subcommittee, requests a White House investigation into reports that Russia violated the MTCR by attempting to ship components for long-range missiles through Jordan to Iraq in 11/95.

Defense News, 2/5/96-2/11/96, p. 2 (5925).

IRAQ WITH RUSSIA

1/4/96

Russia's Foreign Ministry releases a press statement regarding the visit of Deputy Foreign Minister Viktor Posuvalyuk to Baghdad. During the visit, Posuvalyuk is scheduled to emphasize the need for Iraq

to cooperate with UNSCOM and to close "all the remaining gaps in the disarmament process."

Denis Perkin, *Itar-Tass* (Moscow), 1/4/96; in FBIS-SOV-96-004, 1/4/96 (5861).

ISRAEL

INTERNAL DEVELOPMENTS

11/95

Elta completes the second of its Green Pines L-band active array radars for the Arrow-2 ATBM system. Tadiran also delivers the battle management command, control, and communications (BMC3) system for the Arrow-2. Israel Aircraft Industries (IAI) is the prime contractor for the Arrow-2 project. IAI will begin systems integration for the Arrow-2 in the near future.

International Defense Review, 1/96, p. 5 (5912).

12/95

The Israel Defense Force's (IDF) Planning Branch will present the country's multi-year "Composite 2000" military force plan to Israeli Prime Minister and Defense Minister Shi'mon Peres. The plan is being prepared by Major General Uzi Dayan, head of the IDF's Planning Board. The plan identifies the continued proliferation of SSMs as one of the principal long-term threats to Israeli security. The plan provides \$200 million for the continued development of the Arrow ATBM system. General David Ivri, director of Israel's defense ministry, says the Arrow is designed to give Israel an operational defense capability against sudden missile strikes. According to Re'uven Pedatzur, however, the Arrow missile system is "redundant, too costly, and too small a benefit." The Israeli Air Force will continue to procure UAVs such as the Searcher for gathering intelligence. The air force will also equip its aircraft with advanced air-to-surface missiles manufactured by Rafael.

Aluf Ben, *Ha'aretz* (Tel Aviv), 12/3/95, pp. A1-A2; in FBIS-NES-95-233, 12/3/95 (5918). Aluf Ben, *Ha'aretz* (Tel Aviv), 12/27/95, p. A3; in FBIS-NES-95-250, 12/27/95 (5918). Re'uven Pedatzur,

Ha'aretz (Tel Aviv), 12/11/95, p. B1; in FBIS-NES-95-238, 12/11/95 (5918).

1/96

IAI conducts the first flight of its short-range Eye-View tactical UAV. The 9-foot long, lightweight UAV has an optronic payload with a day/night sensor.

Aviation Week & Space Technology, 2/5/96, p. 23 (5846).

ISRAEL WITH ITALY, PRC, AND RUSSIA

12/31/95

China completes flight-testing of a domestic "late-model combat aircraft" [probably the F-10] over Bohai Bay. The fighter, flying at low altitudes, destroys a ship with its missiles. According to the Chinese defense journal *Jiefangjun Bao*, the aircraft "accomplished all the flying tests for finalizing the design of the new aircraft model." Sources at the 11/95 Dubai Air Show said China's F-10s, which are being built in Chengdu, are likely to be equipped with the same Russian-designed radar used by Sukhoi Su-27 fighter aircraft. The first F-10 flight test of the radar, made by the Russian firm Phazotron, is expected in 1997. Phazotron officials say the Zhemchoug (Pearl) radar they are proposing is an advancement on their Zhuk multi-mode pulse-Doppler system. The Zhemchoug radar will have an improved target detection range over the Zhuk. China is fitting the Zhuk system on its F-8 fighters as part of an ongoing upgrade program. According to industry officials, China also plans to upgrade its F-7 fleet with new radar. Italy's FIAR, Russia's Phazotron, and Israel's Elta may be among the competitors for this upgrade contract.

Zhongguo Xinwen She (Beijing), 12/4/95; in FBIS-CHI-96-003, 1/4/96 (5797). Charles Bickers and Nick Cook, *Jane's Defence Weekly*, 11/25/95, p. 4 (5797). *Flight International*, 11/22/95-11/28/95, p. 5 (5797). *Flight International*, 11/5/95-11/21/95, p. 4 (5797).

ISRAEL WITH RUSSIA

11/3/95

Israel and Russia sign a two-year memorandum of understanding (MOU) on defense cooperation. Grachev describes as "a

complete lie" a report on Israel Radio's Russian service that Moscow has agreed to purchase missiles and tanks from Israel.

Steve Rodan, *Jerusalem Post* (Jerusalem), 11/4/95, p. 12; in FBIS-NES-95-232, 11/4/95 (5899).

12/1/95

Israel and Russia sign a MOU which includes a pledge to cooperate in stemming the proliferation of weapons of mass destruction to extremist states.

Sharon Denny, *Defense News*, 12/4/95-12/10/95, p. 2 (5675).

ISRAEL WITH SOUTH KOREA

1/3/96

Israeli Major General Eytan Ben-Eliyahu meets with the South Korean Deputy Defense Minister in Seoul to discuss the export of weapons and expertise, including UAVs, to South Korea.

Jerusalem Wol Yisra'el, 1/4/96; in FBIS-EAS-96-003, 1/4/96 (5769).

ISRAEL WITH SWITZERLAND

1/1/96*

The Swiss firm Oerlikon-Contraves is to sell four ADS 95 Ranger UAV systems to Switzerland's Defense Agency for \$200 million. The systems are based on IAI's Ranger UAVs. IAI is one of the primary subcontractors to the Swiss program. Each ADS 95 Ranger system comprises seven UAVs, "two ground control stations, two communication terminals, two launchers and two mobile receiving units." Delivery of the first system is scheduled for mid-1998.

Aviation Week & Space Technology, 1/1/96, p. 16 (5863).

ISRAEL WITH SYRIA

12/95

Israeli Minister for Industry and Trade Mikha Harish says that proximity to an opponent's missile launch sites is a crucial factor in being able to "take them out." Harish makes the comment in reference to a national referendum on the issue of whether Israel should give the strategically situated Golan heights back to Syria. Harish says Syria has more Scud SSMs than Iraq

ever had.

Ben Kaspi, *Ma'ariv* (Tel Aviv) 12/29/95, p. 7; in FBIS-NES-96-001, 12/29/95 (5864).

ISRAEL WITH UNITED STATES

11/95

Officials from the U.S. Predator UAV program demonstrate the vehicle's capabilities to Israeli military officials at Fort Huachuca in Arizona.

David A. Fulghum, *Aviation Week & Space Technology*, 11/13/95, pp. 72-73 (5742).

11/4/95*

The U.S. firm Loral Vought Systems concludes a \$103.5 million Foreign Military Sales contract with Israel to supply 42 multiple launch rocket system (MLRS) launchers and over 1,500 tactical rockets. The launchers will be delivered by 5/98, and all the rockets will arrive by 9/98.

Jane's Defence Weekly, 11/4/95, p. 8 (5666). *Defense News*, 11/6/95, p. 17 (5666).

12/20/95*

Israel's Rafael is developing a new 100 km-range missile designed to intercept SSMs in the boost phase. The new missile will incorporate technology derived from the Python-4 air-to-air missile (AAM), and IAI is examining the feasibility of mounting the new missile on a UAV. The project will soon become a joint U.S.-Israeli program. The Israeli infrared-guided missile is not designed to score a direct hit but will destroy attacking missiles with a "proximity explosion." The U.S. will concentrate its efforts on developing a kinetic-energy-kill missile with a range of at least 200 km. Iraq's Scud SSM attacks during the Gulf War prompted the idea of developing boost-phase-intercept (BPI) missiles. Rafael needs \$15 million to continue development of the new weapon, which is scheduled for a demonstration launch before the end of 1998.

Flight International, 12/20/95-1/2/96, p. 15 (5854). Arye Arad, *Davar Rishon* (Tel Aviv), 12/22/95, p. 1; in FBIS-NES-95-247, 12/22/95 (5671).

1/96

Israel is scheduled to test fire the prototype of the Arrow-2 anti-tactical ballistic missile (ATBM). The Israeli-U.S. Arrow Continuation Experiments (ACES) will be

completed in FY 1996 and the demonstration/validation phase will then proceed into the engineering development stage under the "Arrow Deployability Project." According to the terms of a U.S.-Israeli memorandum of understanding, the U.S. will continue to support the Israeli project with an annual contribution of \$40 million research funding from FY 1997. The annual U.S. contribution will include \$5 million for boost-phase intercept research. In return for funding the Arrow-2, the U.S. receives data relevant to the Theater High Altitude Area Defense (THAAD) hit-to-kill missile defense program and to "theater-defense versions of the naval Standard missile." Israel is expected to begin low-rate initial production of the Arrow-2 system in 1997 and an operational capability could be achieved in 1998.

International Defense Review, 1/96, p. 5 (5912).

1/8/96

U.S. Secretary of Defense William Perry says the U.S. will give Israel \$200 million to continue development of the Arrow ATBM over the next five years. Israel will contribute \$300 million to the project over the same period. Following a successful Arrow test launch in 7/95, Israel announced that the missile may be operational by mid-1997. According to Israeli defense sources, the cost of the Arrow ATBM project will total \$1.25 billion.

Charles Aldinger, *Reuter*, 1/8/96; in *Executive News Service*, 1/8/96 (5851).

Late 1/96

Paul Kaminski, U.S. Department of Defense (DOD) acquisition chief, considers terminating production of the short-range Hunter UAV, which is jointly manufactured by IAI and the U.S. firm TRW. Over the past five years, the DOD has spent \$700 million on the program and 20 of the UAVs have crashed. The DOD originally granted IAI and TRW a \$169 million contract to produce seven Hunter UAVs and planned to spend an additional \$4 billion on procuring an additional 50 systems for the U.S. Army, Navy, and Marine Corps.

Flight International, 1/31/96-2/6/96, p. 16 (5900).

ITALY

ITALY WITH:

**France and United Kingdom, 139
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**ITALY WITH PAKISTAN, PRC, AND
RUSSIA**

1/1/96*

Russia is offering China the Super Komar radar, which is an improved version of the Kopyo, for the joint Chinese and Pakistani FC-1 fighter project. Although Western firms such as Italy's FIAR are also competing for this contract, Chinese sources have indicated that the People's Liberation Army favors a domestic source for its FC-1 fire-control radars.

International Defense Review, 1/96, p. 10 (5938).

JAPAN

INTERNAL DEVELOPMENTS

11/28/95

The Japanese government approves Japan's "National Defense Program Outline" which emphasizes the need for a leaner, high-tech military to counter new security threats such as those posed by missile and nuclear proliferation. According to sources in the Japanese Defense Agency (JDA), the outline supports the development of anti-tactical ballistic missile (ATBM) capabilities. Japan also pledges to cooperate with arms control and disarmament efforts by the U.N. and other international organizations aimed at "preventing the proliferation of weapons of mass destruction and missiles."

Eugene Moosa, *Reuter*, 11/28/95; in *Executive News Service*, 11/29/95 (5837). Japan Ministry of Foreign Affairs (Internet), 12/95; in FBIS-EAS-96-016, 1/24/96 (5837). Naoaki Usui, *Defense News*, 12/4/95-12/10/95, p. 45 (5837). *Nihon Keizai Shimbun* (Tokyo), 12/2/95, p. 2; in FBIS-EAS-95-233, 12/2/95 (5837).

12/5/95

Officials from Japan's Ministry of International Trade and Industry (MITI) state that new export control regulations will soon require exporters to "seek export permission" if they are informed by the trade minister that their goods could be utilized in the development of weapons of mass destruction (WMD), or when there are "objective concerns over such use."

Mainichi Shimbun (Tokyo), 12/13/95, p. 9; in FBIS-EAS-95-241, 12/13/95 (5695). *Kyodo* (Tokyo), 12/5/95; in FBIS-TAC-95-007, 12/5/95 (5695).

12/12/95

MITI decides to implement new export controls to hinder the spread of missiles and WMD from 10/96. MITI plans to require export permits for over 80 items which could be used to develop missiles and nuclear, biological, and chemical weapons. Japan's new export regulations will cover "general purpose" items such as integrated circuits, machine tools, engines, and pumps. Although all countries will be subject to export controls, MITI officials state that less stringent standards will be applied to countries which observe international nonproliferation accords. MITI will also relax controls on exports to the U.S. and European countries that belong to the Australia Group.

Mainichi Shimbun (Tokyo), 12/13/95, p. 9; in FBIS-EAS-95-241, 12/13/95 (5695). *Kyodo* (Tokyo), 12/5/95; in FBIS-TAC-95-007, 12/5/95 (5695). *Yomiuri Shimbun* (Tokyo), 11/5/95, p. 7; in FBIS-TAC-95-007, 11/5/95 (5695).

12/25/96

The JDA announces that Japan's defense budget for 1996 will allocate \$2.85 million (295 million yen) for "concept studies" on the research and development of a ballistic missile defense system. The defense budget will also provide for the purchase of nine multiple launch rocket systems (MLRSs).

Naoaki Usui, *Defense News*, 1/8/96-1/14/96, p. 11 (5720).

JAPAN WITH PRC

1/15/96

During the third set of security talks between China and Japan, Beijing announces

that it is preparing its first white paper on the People's Liberation Army, following a recent promise to "issue a report on Army buildup at a proper time." In 11/95, Beijing released a white paper on "China's Arms Control and Reduction" in response to Japanese demands that the Chinese military become more transparent. China and Japan had begun discussions on security issues in 1994. At the 1/15/96 meeting, Chinese officials say they consider the amount of money spent by Japan on military equipment to be "enormous," adding that Tokyo should be careful when thinking about spending money on defense and conducting joint research with the U.S. on the Theater Missile Defense (TMD) project. During the talks, Japan also demands that China cease all nuclear testing without delay. China repeats its claim that, in comparison to the other declared nuclear powers, its number of tests is the lowest and that these tests are only for self-defense. Japan is represented at the meeting by Bureau of Defense Policy Director General Masahiro Akiyama and Director General of the Asian Affairs Bureau of the Foreign Ministry Ryozo Kato. The Chinese side includes Wang Yi the director of the Foreign Ministry's Department of Asian Affairs.

Noriyoshi Itokawa, *Asahi Shimbun* (Tokyo), 1/16/96 (Morning Edition), p. 2; in FBIS-CHI-96-013, 1/16/96 (5955). *Kyodo* (Tokyo), 1/15/96; in FBIS-CHI-96-010, 1/15/96 (5955).

1/16/96

Responding to a question on China's opposition to joint U.S.-Japan development of TMD, Japanese Foreign Ministry spokesperson Hiroshi Hashimoto says China understands Japan's defense policy is "completely defensive" in nature, and that Tokyo is still only considering the possibility of TMD development.

Japan Ministry of Foreign Affairs WWW, 1/16/96; in FBIS-EAS-96-013, 1/16/96 (5939).

JAPAN WITH UNITED STATES

11/95

The Japanese and U.S. governments conclude an \$80 million contract with the U.S.'s Standard Missile for 243 Standard naval surface-to-air missiles (SAMs). Stan-

dard Missile is a joint Hughes-Raytheon venture.

Flight International, 11/29/95-12/5/95, p. 17 (5688).

11/4/95*

The U.S. firm Loral Vought Systems concludes a \$4.4 million contract with Japan to deliver 180 MLRS tactical rockets and 180 reduced-range practice rockets by 9/97.

Jane's Defence Weekly, 11/4/95, p. 8 (5666).

12/6/95

Japanese Finance Minister Masayoshi Takemura debates the usefulness of Japan's involvement in the U.S. TMD system during a meeting of the Japanese Security Council. Takemura is a member of the "New Party Sakigake" which is reluctant to support TMD.

Kyodo (Tokyo), 12/14/95; in FBIS-EAS-95-241, 12/14/95 (5719). Kyodo (Tokyo), 12/6/95; in FBIS-EAS-95-234, 12/6/95 (5719). Kyodo (Tokyo), 12/14/95; in FBIS-EAS-95-240, 12/14/95 (5719).

12/14/95

Japan's Security Council and Finance Ministry agree on a 25.15 trillion yen budget for a five-year defense plan which will include an investigation into the "usefulness and cost-effectiveness" of TMD. The TMD plan—a U.S. project to deploy a network of satellites and missiles to target incoming ballistic missiles—had been a "sticking point" in Japan's ruling coalition between the Liberal Democratic Party (LDP) and the Social Democratic Party (SDP). The LDP supports the plan, while the SDP does not want to commit fully to the project. The impasse was resolved when LDP conceded by diluting the wording of the five-year plan to indicate that the study does not necessitate a commitment to participate fully in the program.

Kyodo (Tokyo), 12/14/95; in FBIS-EAS-95-241, 12/14/95 (5719). Eugene Moosa, *Reuter*, 12/14/95; in *Executive News Service*, 12/14/95 (5719).

12/26/95

Japanese Prime Minister Tomiichi Murayama tells the upper house audit committee that Japan intends to continue pursuing TMD with the U.S. Although Murayama says Japan is actively involved in the U.S. project at the "working level,"

any "final decision" about pursuing TMD "should be made after repeated discussions from a comprehensive viewpoint."

Kyodo (Tokyo), 1/4/96; in FBIS-EAS-96-003, 1/4/96 (5698). *Sankei Shimbun* (Tokyo), 12/27/95, p. 3; in FBIS-EAS-95-250, 12/27/95 (5698).

1/4/96

JDA Chief Seishiro Eto announces that he is prepared to undertake joint "research and development" with the U.S. on TMD.

Kyodo (Tokyo), 1/4/96; in FBIS-EAS-96-003, 1/4/96 (5698).

JORDAN

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Austria, Iraq, and Russia, 137

Iraq, 144

Iraq and Russia, 144

Iraq, Russia, and United States, 145

KAZAKSTAN

KAZAKSTAN WITH RUSSIA

1/25/96

At a meeting in Almaty, Kazakstani President Nursultan Nazarbayev and Russian Defense Minister Pavel Grachev discuss mutual security issues, including the establishment of a common air defense system. Grachev says Nazarbayev is the most active proponent of Kazak-Russian cooperation on a missile attack warning system, on air defense, and on the joint use of installations in the interest of common security.

Interfax (Moscow), 1/25/96; in FBIS-SOV-96-018, 1/25/96 (5727).

KAZAKSTAN WITH RUSSIA AND UNITED STATES

12/6/95*

The Kazakstani Foreign Ministry states that Kazakstan has completed the first step to-

wards implementing the Strategic Arms Reduction Treaty (START) by dismantling the upper sections of long-range ballistic missile silos at Zhangiztob, in Semipalatinsk. Under agreements with the U.S., military specialists from both countries will cooperate in dismantling Kazakstan's remaining nuclear missile infrastructure and in converting facilities for other uses. Military personnel from Kazakstan's Zhangiztob and Derzhavinsk ICBM sites will be transferred back to Russia. The complete dismantlement of Kazakstan's strategic nuclear missile arsenal and the related facilities is scheduled for completion by late 1996. Kazakstan will then have fulfilled its obligation to become a non-nuclear state in compliance with the Lisbon Protocol of 1993.

Kazakstanskaya Pravda, 12/6/95, p. 1 (5883).

KUWAIT

KUWAIT WITH:

France, 139

KUWAIT WITH RUSSIA

Late 11/95

Kuwait receives Smerch multiple rocket launchers from Russia.

Viktor Lebedev, *Itar-Tass* (Moscow), 12/12/95; in FBIS-SOV-95-239, 12/12/95 (5712).

12/12/95

A Russian delegation arrives in Kuwait to witness the "launch" of Smerch multiple rocket launchers scheduled for 12/13/95. The delegation includes Boris Kuzyk, aide to the president of the Russian Federation for military and technical cooperation, and Aleksandr Kotelkin, director of Russia's state-owned Rosvoorouzhnie. Kuwait's Smerch crews trained originally in St. Petersburg and exercised in other areas of Russia. Colonel General Nikolay Dimidyuk, commander of Russian troops armed with the Smerch system, says it can be used to target rocket launching sites, airfields, tank concentrations, and ground

troops.

Viktor Lebedev, *Itar-Tass* (Moscow), 12/12/95; in FBIS-SOV-95-239, 12/12/95 (5712).

MALAYSIA

INTERNAL DEVELOPMENTS

11/25/95

The Royal Malaysian Navy (RMN) is to develop and build up to 27 Offshore Patrol Vessels (OPV) over a period of 15 years with a partner that has yet to be named. Malaysian Defense Minister Datuk Syed Hamid Syed Jaafar Albar is considering other defense needs including the acquisition of additional anti-ship missiles (ASMs). The Malaysian Army is considering the purchase of a multi-barrelled rocket launcher, although funding for this does not appear to be available yet.

Jane's Defence Weekly, 11/25/95, pp. 31-39 (5690).
Michael Mecham, *Aviation Week & Space Technology*, 12/4/95, p. 103 (5690).

MALAYSIA WITH:
France, 139

MALAYSIA WITH SOUTH AFRICA

12/6/95

South Africa's Advanced Technologies and Engineering says it is developing an Unmanned Aerial Observation System with Malaysia's Integrated Technology Systems. Johan Alberts, chief executive officer of South Africa's Denel, says South Africa is interested in establishing alliances with Malaysia for coproducing, codeveloping, and comarketing defense items. South African industry and government representatives plan to exploit defense trade ties with Malaysia in order to access the Southeast Asian arms market. Charles Mansfield, director of defense export services for the U.K.'s Ministry of Defence, says "South Africa is now a very aggressive defence exporter" and "is determined to get its share of the market."

Jason Glashow, *Defence News*, 12/11/95-12/17/95, pp. 4, 42 (5721).

MALAYSIA WITH UNITED KINGDOM

11/25/95*

The RMN expects to receive two Lekiu class frigates fitted with eight Exocet Block II ASMs from the U.K.'s Yarrow Shipbuilders in mid-1996.

Jane's Defence Weekly, 11/25/95, pp. 31-39 (5690).

NORTH KOREA

INTERNAL DEVELOPMENTS

12/2/95*

According to Lieutenant General Kim Tong-sin, Director of Operations of the South Korean Joint Chiefs of Staff, the DPRK has manufactured 90 more 170-mm and 240-mm multiple launch rocket system (MLRS) in 1995 than in 1994 and has boosted the number of MLRS deployed near the Demilitarized Zone (DMZ). In 1994, North Korea deployed about 190 240-mm MLRS and about 360 170-mm MLRS within range of Seoul, but in 1995, the DPRK deployed some 240 240-mm MLRS and some 450 170-mm MLRS. Kim notes that North Korea is currently testing engines for the 1,500 km-range Taepo-dong missiles.

Korea Herald (Seoul), 12/2/95, p. 3; in FBIS-EAS-95-232, 12/2/95 (5818). Yu Yong-won, *Choson Ilbo* (Seoul), 12/13/95, p. 6; in FBIS-EAS-95-239, 12/13/95 (5818). Yi Tong-kwan, *Tong-A Ilbo* (Seoul), 12/12/95, p. 2; in FBIS EAS-95-239, 12/12/95 (5818). Kim Song-kol, *Hangyore Sinmun* (Seoul), 12/18/95, p. 5; in FBIS-EAS-95-243, 12/18/95 (5818).

NORTH KOREA WITH UNITED STATES

Early 1996

North Korea and the U.S. are expected to begin talks concerning North Korea's foreign sales of Scud missiles. The Scud talks are considered a continuation of the recently completed effort to negotiate a nuclear agreement with North Korea. North Korea and the U.S. are still conferring about the time and place of the Scud negotiations. According to the South Ko-

rean government, North Korea may be increasing its Scud sales to alleviate the current food shortage. On 12/30/95, a South Korean government official said North Korea is "actively developing overseas markets" for Scud missiles. North Korean and U.S. officials intend to meet in Hawaii on 1/9/96, possibly to discuss the Scud issue. The South Korean government has billed the U.S.-DPRK meeting as working-level negotiations on North Korea's return of U.S. soldiers' remains.

Ku Song-chae, *Choson Ilbo* (Seoul), 12/31/95, p. 2; in FBIS-EAS-96-001, 12/31/95 (5806).

OMAN

OMAN WITH UNITED KINGDOM

11/11/95*

The U.K.'s Vosper Thornycroft is currently conducting "weapons acceptance trials" for Oman's Qahir Al Amwaj Surface Naval Vessel (SNV). The Qahir Al Amwaj SNV is scheduled to enter service with the Royal Navy of Oman (RNO) in late 1996 and will be equipped with Exocet MM-40 anti-ship missiles, a Thomson-CSF Crotale NG air defense system, a Signaal MW083D surveillance radar, and a Castor surface-to-air missile fire-control radar. The Qahir Al Amwaj is the first of two Muheet project SNVs under construction for the RNO. The Al Mua-zzar SNV is scheduled for delivery in early 1997.

Charles Bickers, *Jane's Defence Weekly*, 11/11/95, p. 26 (5681). *International Defense Review*, 1/96, p. 11 (5848).

PAKISTAN

INTERNAL DEVELOPMENTS

1/23/96

Pakistani Ambassador Munir Akram tells the U.N. Conference on Disarmament in Geneva that Pakistan will undertake "ap-

propriate measures” if nuclear-capable missiles are stationed in proximity to its borders.

AFP (Paris), 1/23/96; in FBIS-NES-96-015, 1/23/96 (5747). Radio Pakistan Network (Islamabad), 1/23/96; in FBIS-NES-96-016, 1/23/96 (5747).

PAKISTAN WITH:

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PERU

INTERNAL DEVELOPMENTS

1/8/96*

Peru purchases an “unspecified” number of Scud missiles.

EFE (Madrid), 1/8/96; FBIS-LAT-96-008, 1/8/96 (5670).

PERU WITH:

Bulgaria, 138

Ecuador, 139

PEOPLE’S REPUBLIC OF CHINA

INTERNAL DEVELOPMENTS

11/11/95*

China has fitted its new RF-61 surface-to-air missiles (SAM) (Western designation: CSA-N-2) on its Jiangwei-class frigates. The RF-61 is also operational in a land-based version, the HQ-61. The RF-61 was developed and is built by the China Precision Machinery Import and Export Company (CPMIEC). The RF-61 reportedly has a range of 2.5 km to 12 km, altitude coverage of up to 10,000 m, weight of 320 kg, maximum speed of Mach 3, and guidance by semi-active continuous wave radar.

Jane’s Defence Weekly, 11/11/95, p. 3 (5773).

11/16/95

China releases its “White Paper on Arms Control and Disarmament.” The White Paper discounts perceptions of a “China threat” and criticizes the other nuclear weapon states because they “have neither abandoned their policy of nuclear blackmail nor stopped their development of nuclear weapons and outer-space weapons, including guided-missile defense systems.” China chastises other nations for competing with one another to sell advanced weapons on the international market and for using arms sales to influence the domestic affairs of other nations. The paper says China opposes an arms race in outer space, stating that “no country should develop any kind of weapon to be used in outer space.”

Xinhua (Beijing), 11/16/95; in FBIS-CHI-95-221, 11/16/95 (5958). Robert J. Saiget, *Washington Times*, 11/17/95, p. A17 (5958). Xinhua (Beijing), 11/16/95; in FBIS-CHI-95-222, 11/16/95 (5958). Jane Macartney, Reuter, 11/16/95; in Executive News Service, 11/17/95 (5958). Xinhua (Beijing), 11/16/95; in FBIS-CHI-95-221, 11/16/95 (5958).

11/25/95

Forces from the Nanjing military district conduct combined exercises off southeastern Fujian in which a beach landing is supported by naval vessels and fighter aircraft firing missiles. Chinese television shows the navy, army, and air force of the Nanjing military region participating in a military exercise off the coast of Fujian, near Taiwan. The television broadcast says that an air force battalion recently launched eight missiles along an unidentified firing range, all of which struck their targets. Although the television report describes the missile test as having had “the best results in history,” the missiles are not shown hitting their targets.

Benjamin Kang Lim, Reuter (Beijing), 11/27/95; in Executive News Service, 11/29/95 (5758). Reuter, 11/27/95; in Executive News Service, 11/29/95 (5823).

11/27/95-12/1/95

The Aerospace China ’95 Exhibition and Conference will be held at the China Agriculture Center in Beijing. The conference will be sponsored by the Commission on Science, Technology, and Industry for National Defense (COSTIND), the State Science and Technology Commission, the

China National Aviation Corporation, and the China National Aerospace Corporation. Officials from the industries of military aviation, space technology, and defense electronics will showcase products including aerospace and avionics components and instruments, military and civil aircraft and technologies, air traffic control and navigation systems, launch vehicles, propulsion systems, satellites, imaging systems, and defense aerospace conversion products and services.

S&T Perspectives, 3/31/95, p. 24 (5787).

11/29/95*

China is currently constructing several warships that will be equipped with the latest missile technology and deployed in Hong Kong after 1997. A Chinese military source says China is assembling four or more missile corvettes at its Shanghai and Dalian shipyards.

Reuter, 11/27/95; in Executive News Service, 11/29/95 (5804).

12/2/95*

China National Precision Machinery Import and Export Corporation distributes a photograph of its KS-1 medium-range SAM. The manufacturer expects the KS-1 SAM to be the primary medium-range SAM system deployed by China in the future. The 42 km-range, 900 kg KS-1 SAM has an operational ceiling of 25 km, a length of 5.6 m, a diameter of 0.4 m, and a speed of Mach 4. Two of the previously unknown features of the KS-1 SAM are longitudinal strengthening and a “spiked” nose. The twin missile launch vehicle is truck-loaded and equipped with a phased array radar. A similar phased array radar is also used for the HQ-2B SAM.

Jane’s Defence Weekly, 12/2/95, p. 5 (5805).

12/10/95*

A Second Artillery Corps base has identified key weaknesses in its standard training program, including the inability of its firing units to launch simultaneous nuclear counterattacks. The base’s suggested reforms are confirmed by a Second Artillery Corps Training Work Conference. In the past three years, the base has developed a series of command measures, including “rationalized command formation, simpli-

fied communication, digitized command telegrams and papers, and automated auxiliary decisionmaking." New equipment has been developed to improve training, including "an automatic cable network missile test system" designed to increase combat survivability of strategic missile units. It was determined that training must differentiate between the requirements of veteran soldiers and raw recruits. The problem of maintaining a baseline of readiness following the loss of veteran soldiers upon demobilization was also recognized. New training techniques have been developed to deal with weaknesses in other areas such as logistical support, live ammunition launch, combat-readiness, and developing a dependable launch capability.

Zhang Jiajun and Liu Shengdong, *Jiefangjun Bao* (Beijing), 12/10/95, p. 1; in FBIS-CHI-96-020, 12/10/95 (5952).

12/18/95*

The Chinese defense journal *Jiefangjun Bao* reports that the Chinese Air Force Missile Academy's air defense research focuses on the following technologies: anti-jamming equipment, anti-stealth equipment, and "counter-counter-radiation missiles" [electronic counter-counter-measures]. The Academy has tried to refit older air defense equipment with upgraded technologies. The guidance, tracking, and range of low-altitude SAMs has also been improved. Upgrading air defense simulation for training has been important to the Air Force, as has been improving the realism of tactical-level training.

Li Zhiwei and Yao Zhisheng, *JieFangJun Bao* (Beijing), 12/18/95, p. 2; in FBIS-CHI-95-249, 12/18/95 (5799).

12/21/95*

The PLA's Second Artillery has completed the construction of a country-wide system of M-9 missile bases. Under the project, called the "Great Wall Project," China built dozens of missile bases, many using transporter-erector-launchers (TELs). The project was begun 12 years ago, and progress was accelerated in 1994. Due to early completion, China is able to deploy M-9 missiles in the Nanjing Military District for use in its missile tests off of Taiwan.

Far Eastern Economic Review, 12/21/95, p. 14 (5774).

1/14/96*

In an article in *The Washington Times*, James Hackett says China appears to have made advances in converting some of its 600 km-range M-9 and 1,800 km-range DF-21 SSMs to carry non-nuclear warheads so they can be used in regional conflict situations. M-9 and DF-21 SSMs are already capable of delivering nuclear, chemical, or biological warheads.

James Hackett, *Washington Times*, 1/14/96, p. B4 (5951).

1/29/96*

Deficiencies in China's ability to operate missile-armed fast-attack craft far from shore are addressed through maneuvers intended to improve fast-attack units' training for supply and refueling capabilities and logistics. Fast-attack units traditionally are unable to "see" very far, creating problems in targeting. During these maneuvers, a fast-attack unit used aircraft to coordinate its offense, enabling the unit to approach the enemy undetected, engage, and resupply its own forces.

Wang Guangxin and Teng Xiaobo, *Jiefangjun Bao* (Beijing), 1/29/96, p. 2; in FBIS-CHI-96-025, 1/29/96 (5755).

1/31/96*

China includes a new model of the Dawn-series mass parallel programming (MPP) supercomputer, the Dawn-3,000, in its "Ninth Five-Year Plan." The project is scheduled to commence before 7/96, with computers up and running by 1998. The new supercomputer will be capable of performing 300 billion calculations per second, and follows the successful development of the Dawn-1,000 in 1995 during the "Eighth Five-Year Plan." MPP series computers with speeds over 200 billion calculations per second will have important applications in meteorology, theoretical physics, nuclear fusion, and chemistry computations.

Qin Chun, *Xinhua Domestic Service* (Beijing), 1/31/96; in FBIS-CHI-96-024, 1/31/96 (5953).

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PRC WITH RUSSIA

1/96*

China plans to purchase between 150 and 200 upgraded X-band Zhuk radars from Russia's Phazotron design bureau for its F-8II and Chengdu J-10/J-9 fighter aircraft, according to officials from Phazotron. In 2/96, the new system will be displayed in a Chinese F-8II jet fighter at the Asian Aerospace show in Singapore. It is reported that the new Zhuk radar is capable of track-while-scan on 24 targets at a detection range beyond the current 80 km capability. The new radar is also capable of displaying eight targets simultaneously and can give fire-control solution for up to four at the same time. In late 1995, Russia delivered the first of two Kopyo radar sets to China.

International Defense Review, 1/96, p. 10 (5938).

1/5/96

The Russian Armaments Company, Rosvoorouzhenie, has arranged for the Severnyy plant in St. Petersburg to produce and deliver 120 S-300 SAM systems to China. The Severnyy plant was once a "closed" production facility for S-200 and S-300 SAM systems. China did not pay for the missiles in hard currency but by barter in "the form of flasks, dinner services, and fluffy stuffed dogs." According to German Gardymov, general director of the Severnyy factory association, payments from China most often come in the form of low quality goods, such as lighters, which cannot be sold for hard currency.

NTV (Moscow), 1/5/96; in FBIS-TAC-96-003, 1/5/96 (5942).

PRC WITH SPAIN

1/23/96*

Eduardo Abellan, president of Spain's Bazan National Enterprise, travels to China to discuss the possible sale of two 20,000 ton fixed wing aircraft carriers. The type

of aircraft carrier being discussed, a so-called "pocket aircraft carrier," has not yet been marketed. The aircraft carrier is 205 m long and could carry about 21 or 22 aircraft, possibly the F-18 or the naval variant of the MiG-29. The contract would be divided into two stages, with construction of the hull and propulsion system in the first and acquisition of weapons systems in the second. The price of each carrier, not including the weapons systems, would be 45 billion pesetas. Chinese Foreign Ministry Spokesman Chen Jian denies the report of negotiations, saying China does not intend to import or develop aircraft carriers.

Luis Ayllon, *ABC* (Madrid), 1/23/96, p. 23; in FBIS-TAC-96-001, 1/23/96 (5783). Xinhua (Beijing), 1/23/96; in FBIS-TAC-96-001, 1/23/96 (5783).

PRC WITH TAIWAN

11/95*

Professor of Strategic and Defence Studies at the Australian National University Desmond Ball says Taiwanese electronic intelligence has catalogued the performance parameters of all signal-emitting electronic systems on China's new Su-27 aircraft. This includes the aircraft's missile tracking and fire control modes and the full range of its electronic counter-measures.

Jane's Intelligence Review, 11/95, pp. 506-510 (5820).

11/16/95*

China will conduct missile exercises in the Taiwan Strait on the eve of Taiwan's elections, according to an informed military source. The missile tests, designed to induce "absolute shock" in Taiwan, are scheduled for 3/96. Chinese Foreign Ministry spokesman Shen Guofang denies any knowledge of the reported tests. Another military exercise, which will be conducted on Dongshan Island, off the coast of Fujian and Guangdong, is scheduled to take place before the end of 1995.

Leng Mou, *Kuang Chiao Ching* (Hong Kong), 11/16/95, No. 278, pp. 6-9; in FBIS-CHI-95-229, 11/16/95 (5835). Wang Yu-yan, *Lien Ho Pao* (Hong Kong), 11/24/95, p. 8; in FBIS-CHI-95-226, 11/24/95 (5835).

11/26/95*

China's People's Liberation Army (PLA) has established a Joint Command Center in Fuzhou, Fujian province, designed to focus PLA intelligence, logistics and other operations against Taiwan. The center is reportedly under direct control of the PLA's Central Military Commission and General Staff Department, and will work closely with the Nanjing Military region. The center is expected to set up or re-establish military and engineering facilities in Fujian and Zhejiang provinces. Conventional PLA units, missiles, aircraft, artillery, and airborne and amphibious units have already been deployed to the two provinces. The main role of the center is reportedly to make preparations to threaten or attack Taiwan. The center played an important role in the recent military exercises along the Fujian coast, according to Western military analysts.

Willy Wo-Lap Lam, *South China Sunday Morning Post* (Hong Kong), 11/26/95, p. 5; in FBIS-CHI-95-227, 11/26/95 (5836).

11/27/95

Five days in advance of Taiwan's parliamentary elections, China broadcasts television footage of a Chinese air force battalion test-firing eight (surface-to-surface missile) SSMs with live ammunition. The Chinese state-run station says each missile hit its target successfully. Noting that China rarely broadcasts its exercises, a Western diplomat says the images are intended as a warning against Taiwan's aspirations to independence.

Benjamin Kang Lim, *Reuter* (Beijing), 11/27/95; in *Executive News Service*, 11/29/95 (5758).

1/5/96*

China will conduct a large-scale military exercise combining its naval and air forces in the East and South China Seas, according to military intelligence sources. The intent is to conduct blockade and anti-blockade drills with submarines and to test the compatibility of China's East and South China Sea fleets. The anti-blockade exercise is reportedly called "Haijing" (Sea Whale). The exercise is thought to be intended to influence Taiwan's presidential elections, because China does not usually conduct exercises in February, preferring

to wait until the period of better weather between April and December. According to a military source, the exercise was to have been held in mid-12/95 but was put off in favor of two missile tests in the East China Sea and a joint training exercise on Tungshan island.

Tzu-Li Wan-Pao (Taipei), 1/5/96, p. 2; in FBIS-CHI-96-008, 1/5/96 (5785).

1/15/96*

China conditionally cancels plans for further military exercises aimed at Taiwan during the period leading up to Taiwan's 3/96 elections. The decision not to hold exercises is conditioned upon Taiwan President Lee Teng-hui's "behaving himself" before the election, according to sources in Beijing. Taiwan expects China to conduct further tests and large-scale troop deployments to constrain Taiwanese independence aspirations. According to recent reports, China will conduct a major missile test in 2/96.

Wu Zhong, *Hong Kong Standard* (Hong Kong), 1/15/96, p. 1; in FBIS-CHI-96-010, 1/15/96 (5786).

1/25/96*

In response to a *New York Times* report of a potential Chinese military strike against Taiwan, a Taiwanese government spokesman says there is no reliable evidence that such an attack is planned. Taiwan's President Lee Teng-hui, however, appeals to the United States to continue the sale of defensive arms to Taiwan in order to maintain stability. According to Japanese media reports, China recently deployed large numbers of missile forces and military aircraft in Fujian Province. Although Taiwan has not officially responded to these reports, a senior analyst at Taiwan's Sun Yat-sen University says he would be "more surprised if China was not moving forces closer to Taiwan." In 12/95, China conducted military exercises off the coast of Taiwan in conjunction with the island's legislative elections.

Rupert Hayes, *Voice of America*, 1/25/96; in *Newswire* (online) (5945).

Early 2/96

China will conduct a military exercise off the coast of Taiwan, staged from the coast of Fujian Province. China plans to use the

exercises to mark the one-year anniversary of President Jiang Zemin's speech on Taiwan and to intimidate those Taiwanese who favor independence, according to Chinese sources. According to former U.S. Assistant Secretary of Defense Charles Freeman Jr., China has planned a 30-day attack on Taiwan, which will involve firing one missile a day, after Taiwan's presidential elections.

Pamela Pun and Apple Wan, *Hong Kong Standard* (Hong Kong), 1/26/96, p. 1; in FBIS-CHI-96-018, 1/26/96 (5791).

PRC WITH TAIWAN AND UNITED STATES

1/4/96

Former U.S. Assistant Secretary of Defense Charles Freeman, Jr. tells President Clinton's National Security Adviser Anthony Lake that the People's Liberation Army has plans to launch one conventional missile per day for 30 days against Taiwan in the event of the expected reelection of Taiwanese President Lee Tung-Hui in late 3/96. Freeman held meetings with senior officials in China during the winter of 1995-96. Freeman cites a Chinese official as stating that the U.S. would not intervene militarily because its leaders "care more about Los Angeles than they do about Taiwan." He characterizes this statement as an indirect nuclear threat aimed at the U.S. In a speech to U.S. businessmen after the report, President Lee requests that Washington continue selling weapons to Taiwan for its defense, in accordance with the Taiwan Relations Act. On 1/24/96, China denies the report of the plan, calling it "totally groundless."

Patrick E. Tyler, *New York Times*, 1/24/96, p. A3 (5957). Jeffrey Parker, *Washington Times*, 1/25/96, p. A15 (5957). Apple Wan, *Hong Kong Standard* (Hong Kong), 1/26/96, p. 6; in FBIS-CHI-96-018, 1/26/96 (5957).

1/11/96*

Chinese leader Qiao Shi says he does not believe the U.S. would intervene to defend Taiwan from China. He says, even if the U.S. did intervene, China would not be constrained and could counterattack against targets such as New York.

Chen Yu-wei, *Lien Ho Tsao Pao* (Singapore), 1/11/96, p. 14; in FBIS-CHI-96-023, 1/11/96 (5956).

1/26/96

Taiwan's acting Foreign Ministry spokesman Chen Yung-chuo thanks the U.S. Congress for urging President Clinton to hasten the delivery of the Patriot missile defense system ordered by Taiwan. On 1/25/96, U.S. Congressmen Tom Lantos and Gerald Solomon wrote a letter to President Clinton in which they expressed concern over China's recent military activities toward Taiwan, and recommended that the U.S. strongly communicate its concern for Taiwan's security to Beijing. Lantos and Solomon said the immediate delivery of the Patriot system, previously scheduled to be delivered at a later date, was a suitable response to China's recent military exercises. Lantos and Solomon added that the Patriot system, which has been improved since the Gulf War, is a purely defensive weapon with no offensive capabilities.

Benjamin Yeh, *CNA* (Taipei), 1/27/96; in FBIS-CHI-96-019, 1/27/96 (5944).

PRC WITH UKRAINE

12/4/95

Chinese President Jiang Zemin and Ukrainian President Leonid Kuchma hold talks in China concerning cooperation between China and Ukraine in several fields, including aviation and space technology.

Xinhua (Beijing), 12/4/95; in FBIS-CHI-95-232, 12/4/95 (5814).

1/29/96

Three Chinese and a group of Ukrainian workers from the Yuzhmash design bureau are apprehended for espionage in Dnepropetrovsk. The Chinese reportedly acquired designs from the Yuzhmash workers on booster engine development for ICBMs and intended to smuggle them back to China in violation of the MTCR. The three Chinese are expelled from Ukraine. The Chinese embassy in Ukraine denies the charges of espionage, saying the three were energy experts who were in Ukraine to participate in an information exchange and to negotiate commercial agreements. On 1/30/96, the three Chinese individuals are expelled and banned from entering Ukraine for five years, in accordance with Article 32 of the law "On the Legal Status of Foreigners."

Mikhail Melnik and Raisa Stetsyura, *Itar-Tass* (Moscow), 1/31/96; in FBIS-SOV-96-022, 1/31/96 (5784). Interfax (Moscow), 1/30/96; in FBIS-SOV-96-021, 1/30/96 (5784). Interfax (Moscow), 1/30/96; in FBIS-CHI-96-003, 1/30/96 (5943).

PRC WITH UNITED STATES

11/18/95*

The U.S. Department of Commerce's Bureau of Export Administration denies an application by the U.S. company AlliedSignal Engines for permission to sell turbofan engine technology to China. The technology used in the TFE731-2A-2A engine could be used in aircraft as well as cruise missiles. China intends to use the technology for its K-8 trainer. AlliedSignal had already exported 40 of the engines to China and plans to export another 18. This contract will not be affected by the license application rejection, but AlliedSignal will not be permitted to give the Chinese access to production technology.

Jane's Defence Weekly, 11/18/95, p. 15 (5810).

12/28/95

China launches an Echostar-1 communications satellite into geostationary orbit with its Long March-2E (LM-2E) space launch vehicle (SLV). On 11/28/95, an Asiasat-2 satellite was successfully launched by China Great Wall Industry Corporation (CGWIC) on a LM-2E SLV. China's Long March-3B (LM-3B) is scheduled to launch an Intelsat-708 on its maiden flight in 2/96 out of Xichang. The LM-3B is a hybrid of the Long March-3A—which is itself a Long March 3, with a cryogenic upper third stage—and the Long March-2E's strap-on liquid-fuel booster. It is capable of delivering a 4,800 kg payload into geostationary orbit, a capability comparable to that of the Europe Space Agency Ariane 44L.

Tim Furniss, *Flight International*, 1/10/96-1/16/96, p. 22 (5756).

1/4/96

Critics say the U.S.-China Joint Defense Conversion Commission's provision of an integrated air traffic control network to China's Civil Aviation Authority could enable China to improve its military capabilities. On 1/4/96, Eden Woon, a former

country director for China at the Pentagon and the current executive director of the Washington State China Relations Council, says the project not only helps China in a humanitarian way but also provides opportunities for U.S. suppliers of aircraft and radar. On 10/4/95, Retired Captain Zeke Zardeskas, the former head of the U.S. Navy's electronic warfare group, said that a civilian aircraft control radar is similar to an air defense command radar. Zardeskas stated that although the military applications of such a radar would be defensive in nature, it could be used to monitor tactical aircraft but would probably not be capable of detecting ballistic missiles. On 1/4/96, Retired Vice Admiral Eric McVadon says civilian air traffic control equipment could have some military uses, but China could also acquire the same capabilities by other means and from other countries.

Jason Glashow, *Defense News*, 1/8/96, pp. 1, 20 (5940).

RUSSIA

INTERNAL DEVELOPMENTS

6/30/95*

Russia's NIIGrafit research institute is developing a top-secret ballistic missile referred to as Project X. The new missile has been described as "a cross between a satellite and an airplane." Although the new system can travel at a speed of more than 3,000 km/h, similar to a ballistic missile, its maneuverability is comparable to that of a cruise missile. The nuclear-capable missile can be placed into orbit from a strategic bomber or a rocket booster. The missile can overcome Strategic Defense Initiative (SDI)-type weapons because they cannot make the calculations quickly enough to determine the missile's trajectory. Although the Bora-1 and Bora-2 prototypes of the missile disintegrated on re-entry, NIIGrafit added new technology to the Bora-4 and Bora-5 versions which returned successfully to earth.

S & T Perspectives, 6/30/95, p. 7 (5892).

10/13/95

Russian Prime Minister Viktor Chernomyrdin tells the State Duma that Russia produced new surface-to-air missile (SAM) technology in 1995 despite economic difficulties.

Jane's Intelligence Review Pointer, 11/95, p. 7 (5713).

10/5/95

Russian President Boris Yeltsin signs a decree which states that Rosvoorouzhnie and certain arms development and production ventures designated by the president will conduct all of Russia's arms import and export activities. The decree states that Russia will ensure that previous decisions regarding "military-technological cooperation with foreign countries" conform to the new provisions.

"Decree Of The President Of The Russian Federation On Russian Military-Technological Cooperation With Foreign Countries," 10/5/95; in *Rossiiskaya Gazeta*, 10/17/95 (5932).

11/95

Alexander Lebedev, deputy director general of Russia's Khrunichev State Research and Production Space Center, says his center has developed a Breeze upper-stage for the Proton space launcher which is scheduled for launch in 1998. Lebedev says Russia is also producing a Breeze-K engine for the Rockot spacecraft, which will be launched from the Plesetsk Cosmodrome. The Breeze-K has already been launched three times from Baikonur. The new Breeze-M stage, which is the same as the Breeze-K but includes an extra fuel tank, will be used on the Proton. According to Lebedev, the new upper stage for the Proton will be used to transport heavier payloads of up to 3.2 tons into geostationary orbit. Lebedev says Russia's Rockot is based on the SS-19 missile and has been launched successfully on several occasions. Lebedev also says Russia will be able to launch the Rockot between eight and 10 times per year, although it can only launch one satellite at a time. He adds that if Russia can modify the launcher's fairing to carry two satellites, the Rockot would become much more marketable. According to Lebedev, the Khrunichev Center has a two-year plan—agreed to by Russia's Mili-

tary Space Forces (RKA)—for Proton launches.

Peter B. de Selding, *Space News*, 11/13/95-11/26/95, p. 38 (5868).

11/10/95

A Russian missile regiment test-fires a Topol class ICBM from the state missile range at Plesetsk, in Arkhangelsk. The test concludes the regiment's summer tactical combat training. According to the main staff of the Russian Missile Forces, the missile struck its target with "great accuracy." Colonel General Igor Sergeyev, commander-in-chief of Russia's strategic missile forces, says "the successful launching has been excellent," which is proof of the "high reliability and efficiency of Russian missiles."

Anatolii Yurkin, *Itar-Tass* (Moscow), 11/10/95; in FBIS-TAC-95-006, 11/10/95 (5730).

11/29/95*

Russia is to increase the operational lifetime of its SS-19 ICBMs from 10 to 25 years. According to General Sergeyev, the Russian strategic nuclear arsenal will consist of SS-19 and Topol-M ICBMs, and an improved version of the SS-25 "Sickle" ICBM which is near completion. Sergeyev says production of the Topol-M will begin after flight testing finishes in 1996. It is not clear whether the SS-19s will be modified from six- to single-warhead missiles.

Flight International, 11/29/95-12/5/95, p. 17 (5733).

Early 12/95

Russia finishes dismantling 100 RS-12 strategic missiles at the Perm missile and space complex. According to Mikhail Sokolovskiy, general director of the Iskra scientific production association, the missiles were withdrawn from service and dismantled in compliance with START I. The missiles will be recycled in conjunction with the Kirov scientific production association and Mashinostroytel works. According to specialists from "several American firms," the Perm facility has the technological capacity to become a Russian Center for Missile Recycling.

Leonid Bagdatyev, *Itar-Tass* (Moscow), 12/4/95; in FBIS-UMA-95-234-S, 12/4/95 (5718).

12/21/95*

Russian military specialists successfully test a new, 400 km-range tactical missile at the State Central Test Range at Kapustin Yar in the Astrakhan region. The 5 ton, solid-fuel missile will be deployed with conventional warheads by the Russian Army. The missile system is installed on-board an amphibious, quad-axle, mobile launcher. The missile has a reduced radar cross section and is equipped with counter-measures to evade enemy air defenses. The new missile is more accurate than the 120 km-range SS-21 "Tochka" SSM—which has an accuracy of 8 m—because it incorporates a computerized inertial flight-control system. A crew of five men can operate the missile. Russian Defense Ministry officials say the threat of NATO expansion could speed Russia's development of the new multipurpose battlefield missile. The new missile "could be deployed within two years."

Sergey Novikov, *Segodnya*, 12/21/95, p. 9 (5931).
Post-Soviet Nuclear and Defense Monitor, 11/30/95, p. 11 (5871).

Late 1995

In an interview, Reneli Abramenko, a member of the Russian Academy of Sciences, says Russia has developed a "defensive plasma weapon" which focuses electromagnetic beams "in the atmosphere's upper layers" that can strike targets "travelling at nearsonic or supersonic speeds." Abramenko says the electromagnetic beams create a cloud of highly ionized air at an elevation of 50 km. Rockets and planes travelling through the cloud "lose their trajectory and are destroyed due to horrendous overloading."

Jane's Intelligence Review Pointer, 11/95, p. 7 (5728).

1/23/96

Russia's First Deputy Minister for Defense, Andrey Kokoshin, says Russian designers have almost completed a long-term military development program which will provide Moscow with the best Multiple Independently Targeted Reentry Vehicles (MIRVed) missiles in the world.

Rossiyskaya Gazeta, 1/25/96, p. 1 (5880).

RUSSIA WITH:

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RUSSIA WITH SOUTH KOREA

11/8/95*

Russia is negotiating the sale of its S-300V anti-missile system to South Korea. The S-300V anti-missile system was exhibited by the Russian Rosvooruzheniye State Company at the Defense Seoul '95 international arms exhibition. According to a senior South Korean military source, South Korea is examining the possibility of creating an anti-air defense system with S-300 surface-to-air missiles from Russia. The U.S. makers of the Patriot missile, to which the S-300 is most often compared, are making offers of their own, including Patriot missiles that are more advanced than what the U.S. forces in Korea currently use. The cost of the S-300 is two-thirds that of the Patriot. An unconfirmed report said several hundred Russian specialists are currently working in South Korean industry, 30 at Samsung alone. For example, Igor Timofeyev, previously a designer with the Russian Almaz Company, which produced the S-300 PMU air defense missile system, is now manager of the advanced electronics systems group for the South Korean Samsung Company.

Aleksandr Sychov, *Izvestiya*, 10/10/95, p. 3; in *Current Digest*, 11/8/95, p. 24 (5813). Yonhap (Seoul), 2/20/96; in FBIS-EAS-96-034, 2/20/96 (5764).

RUSSIA WITH UKRAINE

11/28/95

A Ukrainian Defense Ministry source says that 40 percent of Ukraine's 1,600 nuclear warheads have been sent to Russia for destruction and all the warheads will be withdrawn from Ukraine by late 1998. "Russian Air Force commander" Pyotr Deinekin says Moscow will purchase 19 Tu-160 Blackjack bombers and 25 Tu-95 Bear bombers from Ukraine. Under the approximately \$1.5 billion "barter compensation scheme," Russia will also provide Ukraine with "spare parts, technical documentation, and technical aviation services." Deinekin adds that Russia also intends to acquire more than 3,000 cruise missiles from Ukraine. According to other sources, the number of cruise missiles involved in the planned transfer is estimated at 300. According to a Russian Air Force official, the transfer will be conducted in two phases, with the first phase involving Ukraine's delivery to Russia of 10 TU-160 bombers, 15 TU-95 bombers, and approximately 300 cruise missiles.

Post-Soviet Nuclear and Defense Monitor, 11/30/95, p. 11 (5871). Anton Zhigulsky, *Defense News*, 12/4/95-12/10/95, p. 40 (5871). *Washington Times*, 11/25/95, p. A9 (5871). Oleksandr Pukhov, *Intelnews* (Kiev), 12/30/95; in FBIS-SOV-96-001, 12/30/95 (5732).

Late 11/95

Russian Defense Minister Pavel Grachev and Ukrainian Defense Minister Valeriy Shmarov agree to jointly fund a "ballistic missile defense system," which will utilize former Soviet radars in Ukraine. The two defense ministers also agree to Russia's acquisition from Ukraine of 32 SS-19 "Stiletto" ICBMs. Russia has already dismantled 10 of its 170 SS-19 ICBMs, but recently announced that it wants to keep the SS-19s in order to preserve the country's nuclear arsenal "at the necessary level until 2009." Under START II, Russia is allowed to keep 105 of its SS-19 ICBMs in silos. Moscow now wants to retain all of its SS-19s in silos. Grachev and Shmarov also sign an agreement regarding Russian and Ukrainian cooperation in "the military use of outer space," and agree to regularly exchange information in this

field. Vladimir Ivanov, commander of Russia's military space forces, says his personnel are ready to launch Ukrainian-built Sich-1 and Sich-2 satellites from Russia's Plesetsk launch-site "as soon as Ukraine is ready." Moscow and Kiev also indicate their willingness to jointly use space command, control, and telemetry systems located in Ukraine. Russia and Ukraine continue to disagree on how to implement an air defense system for the Soviet successor states.

Post-Soviet Nuclear & Defense Monitor, 11/30/95, p. 11 (5729). *Washington Times*, 11/25/95, p. A9 (5871). Brian Killen, Reuter, 11/24/95; in Executive News Service, 11/24/95 (5871). Interfax (Moscow), 12/25/95; in FBIS-SOV-95-247, 12/25/95 (5871). Mikhail Melnik, Itar-Tass (Moscow), 12/27/95; in FBIS-SOV-95-249, 12/27/95 (5871). Marta Kolomayets, *The Ukrainian Weekly*, 12/3/95, pp. 1, 4 (5871). *Current Digest of the Post-Soviet Press*, 12/27/95, pp. 27-28 (5870).

Late 1/96

Russia transfers four missile-equipped TU-22M3 heavy bombers to Ukraine as part of Kiev's share of the Black Sea Fleet. The bombers have a combat radius of 4,000 km and were built in Kazan in 1990.

Vitaliy Tsebriy, *Kiyevskiy Vedomosti* (Kiev), 1/31/96, p. 3; in FBIS-SOV-96-023, 1/31/96 (5725).

RUSSIA WITH UNITED STATES

1995

Two U.S.-Russian entities compete to supply a rocket engine for Lockheed-Martin's Atlas booster. Russia's NPO Energomash plans to build a modified version of the Russian RD-170, which is currently in service as the first stage of the Zenit space booster. The new RD-180 will be built at Energomash's Khimki factory near Moscow and Lockheed-Martin has chosen Pratt and Whitney to jointly develop the engine with the Russian firm. The second contender is the NK-33 engine which is produced by Russia's NK Engines and is being tested by Aerojet in Sacramento. Aerojet plans to import and sell the engines and eventually to produce them in the U.S.

Post-Soviet Nuclear and Defense Monitor, 11/30/95, p. 9 (5894). *Post-Soviet Nuclear and Defense Monitor*, 12/19/95, p. 12 (5894). Warren Ferster, *Space News*, 11/6/95-11/12/95, p. 6 (5894). Warren Ferster, *Space News*, 1/15/96-1/21/96, pp. 4, 21 (5894).

Late 4/95

The U.S. purchases a highly classified Russian S-300 ZRK SAM system from Russia's Rosvoorouzhnie. Rosvoorouzhnie negotiates the sale in accordance with "Russian Federation Government ruling No. 1841-rs" of 11/26/94. The U.S. firm G.R.A. Trading Company Inc. arbitrates the estimated \$100 million transaction. Russia's Volkhov Defense Systems, a private joint-stock company, acts as subcontractor and general investor for the deal. Prior to this deal, Russia had kept the S-300's technology secret. Some U.S. specialists are concerned the new Russian S-300 system may be able to detect and destroy stealth aircraft. According to a former analyst from the Russian Main Intelligence Directorate of the General Staff, the S-300 ZRK's radar system can detect and engage American stealth aircraft with a 99 percent success rate. Financial constraints reportedly prevent Russia from developing a more sophisticated system to succeed the now declassified S-300 ZRK.

Denis Baranets, *Moskovskiy Novosti* (Moscow), 10/1/95-10/8/95, p. 29; in FBIS-SOV-95-224-S, 11/21/95 (5877).

11/95

The U.S.'s Aerojet and Russia's NK Engines finish testing a liquid-oxygen/kerosene NK-33 rocket engine at Sacramento, California. Aerojet plans to import and sell the engine and eventually to develop the capability to produce them in the U.S. The NK-33 is competing for Lockheed-Martin's engine requirement for the Atlas booster.

Post-Soviet Nuclear and Defense Monitor, 11/30/95, p. 9 (5894). *Flight International*, 11/8/95-11/14/95, p. 32 (5894).

12/95

The Russian Defense Ministry restricts the transfer of the NK-33 rocket engine to the U.S. The Ministry claims the \$5 million export license purchased by Aerojet is "absurd because of the low price" and because the U.S. has modified the terms of the contract to permit the NK-33 to carry military payloads. According to media sources, the Russian Defense Ministry would prefer Lockheed-Martin to purchase the RD-180 engine.

Post-Soviet Nuclear and Defense Monitor, 11/30/

95, p. 9 (5894). *Post-Soviet Nuclear and Defense Monitor*, 12/19/95, p. 12 (5894). Warren Ferster, *Space News*, 1/15/96-1/21/96, pp. 4, 21 (5894).

1/96

The U.S.'s Lockheed-Martin selects the RD-180 liquid fuel rocket engine for the Atlas IIAR booster. Pratt and Whitney says the RD-180 will be launch-ready in 12/98. The RD-180 will also be used as the "baseline engine" in Lockheed-Martin's bid to produce the Evolved Expendable Launch Vehicle (EELV) for the U.S. Air Force. The Russian government needs to approve export licenses for the RD-180 before the deal can proceed. Russia's State Committee for Defense Industries is against selling the RD-180 cryogenic engine on the grounds it would severely damage Russia's defense capabilities. The committee asserts that selling the NK-33 engine would be "more profitable to Russia."

Flight International, 1/24/96-1/30/96, p. 22 (5872). Joseph C. Anselmo, *Aviation Week and Space Technology*, 1/22/96, p. 59 (5872).

1/15/96*

Russian government officials say they are discouraged by the U.S.'s unwillingness to negotiate a higher quota of commercial satellite launches for Russia's Proton rocket. The officials say the U.S. government has been unable to "find time" to discuss the issue, despite having been asked to do so repeatedly over the past nine months. The officials say the quota will be a high priority at the 1/29/96 meeting of the U.S.-Russian Joint Commission on Energy and Space in Washington. The commission established the Proton launch quota in 9/93.

Space News, 1/15/96-1/21/96, p. 2 (5875).

Late 1/96

A Russian delegation is scheduled to arrive in the U.S. to demand that Washington increase Moscow's commercial satellite launch quota. U.S. Trade Representative officials are ready to increase Moscow's quota from nine to 20 geostationary launches through 2000, which will give Russia the right to launch the same number of commercial payloads as Ukraine and China. Russian officials are expected to lobby for a higher quota and the eventual elimination of limits on the number of com-

mercial launches that Moscow is allowed to conduct. However, it would be difficult for Russia to conduct more than four commercial Proton launches from the Baikonur Cosmodrome each year through 2000 because of domestic demands.

Joseph C. Anselmo, *Aviation Week and Space Technology*, 1/22/96, p. 57 (5936).

SOUTH AFRICA

INTERNAL DEVELOPMENTS

11/25/95*

South Africa is pursuing several advanced stand-off weapon programs, including the turbojet-propelled "Multi-Purpose Stand-Off Weapon" (MUPSOW) and a Denel Kentron long-range stand-off weapon with flip-out wings. MUPSOW is a "dispenser weapon," while Denel Kentron's stand-off weapon is comparable to the U.S. Joint Stand-Off Weapon and incorporates a penetration warhead capable of destroying "hardened point targets." South Africa's Kentron is also developing a Long-Range Anti-Aircraft Missile with "rocket/ramjet" propulsion and an imaging infrared seeker.

Jane's Defence Weekly, 11/25/95, p. 20 (5722).

Flight International, 11/29/95-12/5/95, p. 14 (5722).

12/7/95*

The Armaments Corporation of South Africa (Armscor) announces that it has developed an integrated rocket-ramjet propulsion system for medium- to long-range tactical missiles.

Norman Chandler, *Star* (Johannesburg), 12/7/95, p. 8; in FBIS-TAC-95-007, 12/7/95 (5693).

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Belgium, Iraq, United Kingdom, and United States, 137
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SOUTH KOREA

SOUTH KOREA WITH:

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SOUTH KOREA WITH UNITED STATES

11/3/95

During the 27th Annual ROK-U.S. Security Consultative Meeting, U.S. Secretary of Defense William Perry says the U.S. is committed to protecting South Korea with its nuclear weapons. At the meeting in Seoul, the two countries express their concern about North Korea's long-range missile development. In a separate private meeting, Secretary Perry and ROK Defense Minister Yi Yang-ho agree to hold talks to discuss the potential abrogation of a bilateral letter of guarantee between the U.S. and South Korea that restricts the ROK to developing missiles with ranges of no more than 180 km. They also agree to discuss South Korea's potential membership in the MTCR.

KBS-1 Radio Network (Seoul), 11/3/95; in FBIS-EAS-95-213, 11/3/95 (5960). *Yonhap* (Seoul), 11/3/95; in FBIS-EAS-95-213, 11/3/95 (5960).

11/29/95

South Korea formally requests the annulment of the U.S.-ROK missile Memorandum of Understanding (MOU). The 1990 MOU, which restricts the ROK to deploying only missiles with a range of less than 180 km, was signed after the U.S. became aware that Nike-Hercules surface-to-air missile technology provided by the U.S. was being used by South Korea to develop NHK-1 and -2 surface-to-surface (SSMs). The NHK-2, or "Hyonmu" SSM, has a range of 260 km. Although U.S. inspectors have verified the range of those weapons as being within permitted limitations, Washington is worried that South Korea may use this technology to develop weapons with ranges beyond 300 km, the MTCR limit. The U.S. also thinks the development of the NHK-2 SSM could lead to an

arms race between South and North Korea. Some experts believe that South Korea has covertly continued design work on the NHK-2 SSM. On 12/6/95, Director of the Nonproliferation Policy Education Center Henry Sokolski says a new missile, the NHK-A, may already be in production in South Korea. A U.S. government source also says South Korea has "missile aspirations beyond the limits of NHK-2." The U.S. and South Korea have begun negotiations on South Korea's possible admittance to the MTCR. According to U.S. officials, the U.S. is opposed to abrogating the MOU, but wishes to continue talks, because the MTCR issue is important to the South Korean government. The U.S. considers its military protection to be sufficient for South Korea, eliminating the need for indigenous South Korean long-range missiles.

Theresa Hitchens, *Defense News*, 12/11/95-12/17/95, p. 22 (5802). *Hanguk Ilbo* (Seoul), 11/30/95, p. 2; in FBIS-TAC-95-007, 11/30/95 (5802). *Defense News*, 12/4/95-12/10/95, p. 2 (5802). Evan S. Medeiros, *Arms Control Today*, 12/95-1/96, p. 25 (5761).

12/95-1/96*

After initially rejecting a request made by South Korea during the 11/27/95-11/30/95 U.S.-South Korean security talks in Washington to scrap the U.S.-ROK missile MOU, the U.S. State Department agrees to further discussions on the matter. The South Korean Defense Minister and other ROK officials say South Korea should join the MTCR, which would allow them to increase the range of South Korea's missiles to 300 km. This, they argue, would provide a more credible deterrent to North Korean forces and would allow South Korea to develop space launch vehicles.

Evan S. Medeiros, *Arms Control Today*, 12/95-1/96, p. 25 (5761).

12/14/95

John Holum, Director of the U.S. Arms Control and Disarmament Agency, holds talks with South Korean officials about curbing North Korea's sales of conventional weapons, including Scuds.

Ku Song-cha, *Choson Ilbo* (Seoul), p. 2; in FBIS-EAS-96-001, 12/31/95 (5770).

2/6/96

A senior South Korean government source says the U.S. told ROK officials on 11/95 that, even if South Korea joined the MTCR, the U.S. would remain concerned about the possibility of its development of missiles with ranges greater than 300 km. Another high-level official says, "The U.S. distrust of the ROK and its demand that we reveal our independent missile development plan is a form of infringing on our sovereignty. Our basic position is that we expect to receive equal treatment when we become a member of the MTCR."

Yu Yong-won, *Choson Ilbo* (Seoul), 2/7/96, p. 1; in FBIS-EAS-96-026, 2/7/96 (5767).

2/17/96*

The South Korean Defense Ministry denies knowledge of a report that the U.S. will produce 40 tactical missiles capable of countering incoming enemy missiles and deploy them in the ROK. However, according to a U.S. Forces Korea (USFK) spokesman, USFK Commander General Gary Luck did discuss the Theater High-Altitude Area Defense (THAAD) system, which includes such weapons, with Pentagon officials. The spokesman declined comment on THAAD missile deployment in South Korea.

Yonhap (Seoul), 2/17/96; in FBIS-EAS-96-034, 2/17/96 (5765).

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TAIWAN

INTERNAL DEVELOPMENTS

11/22/95

Taiwan commissions a second squadron of the Indigenous Defense Fighter (IDF), or Ching Kuo, combat aircraft. The IDFs will be equipped with indigenously developed Tien Chien (Sky Sword) -1 and -2 air-to-air missiles (AAMs), which are equivalent to the U.S.-designed AMRAAM Aim-120 missile. The missiles will allow the IDFs a beyond visual-range combat capability.

Benjamin Yeh, CNA (Taipei), 11/23/95; in FBIS-CHI-95-226, 11/23/95 (5819).

12/18/95*

Taiwan's Army is expected to budget NT \$320 billion for the FY 1997-2006 period for 10 categories of weapons, including surface-to-air missiles (SAMs). Taiwan's air-defense missile purchases will total some NT \$62 billion and include 54 man-portable SAMs; 36 sets of vehicle-mounted, army group-level SAMs; 153 sets of vehicle-mounted, division-level SAMs; six sets of Sky Bow missile systems; and three sets of U.S.-made Patriot missiles. The army's modernization program commenced in 1994. Approval has already been given for the acquisition of Patriot and Sky Bow missiles.

Chung-kuo Shih-pao (Taipei), 12/18/95, p. 2; in FBIS-CHI-96-001, 12/18/95 (5821). *Chung-Kuo Shih-Pao* (Taipei), 1/28/96, p. 4; in FBIS-CHI-96-024, 1/28/96 (5947).

1/3/96*

Taiwan has deployed its Sky Bow-2 SAM and Chang Pai phased array air-defense radar at the Sky Dragon missile base in Sanchih Township, Taipei County. Constructed in 10/94, Sky Dragon is Taiwan's first Sky Bow missile base and the first to be equipped with Sky Bow-1 SAMs. A single Sky Bow base includes Sky Bow-1 and -2 missiles, vertical and mobile launchers, the Chang Pai phased array radar, and the main radar. Additional space has been allocated for the future deployment of Sky

Bow-2 SAMs. Taiwan is also reported to be deploying the Sky Bow in the Kaohsiung region and planning to deploy the system on the Penghu islands (the Pescadores) and on Tungyin in early 1996. Taiwan's Defense Minister Chiang Chung-ling declines comment on the reported deployment. The Sky Bow was developed by the Defense Ministry's research body, the Chunglshan Institute of Science and Technology. After successful tactical tests for the Sky Bow-2 were conducted at Taiwan's eastern Chiupeng Base in 1995, Taiwan's general staff headquarters decided to deploy them. In comparison to the Sky Bow-1, the Sky Bow-2 has greater thrust, target detection capabilities, maneuverability, and range. The Sky Bow-2 also uses the advanced Chang Pai phased array radar, while the Sky Bow-1 uses the radar used by the Hawk missile system. Taiwan has reportedly decided to modify the Sky Bow missile to develop the Sky Halberd intermediate-range SSM. A Chinese journal reported that Taiwan decided to develop the SSM in 7/95 or 8/95, after Chinese missile tests off Taiwan. Defense Minister Chiang denied this report, stating that "the Sky Bow-2 and the reported surface-to-surface weapons are virtually different systems."

Lu Chao-long, *Chung-Kuo Shih-Pao* (Taipei), 1/3/96, p. 1; in FBIS-CHI-96-010, 1/3/96 (5948). Benjamin Yeh, CNA (Taipei), 1/4/96; in FBIS-CHI-96-003, 1/4/96 (5948).

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TAIWAN WITH UNITED STATES

1/15/96-1/21/96*

A measure designed to increase U.S. military equipment sales to Taiwan is being pursued by members of the House of Representatives and the Senate. Reports by the House International Relations Committee on the American Overseas Interest Act and the Senate Foreign Relations Committee on the Foreign Relations Revitalization Act of 1995 "would give precedence in defense export matters to the 1979 Taiwan Relations Act, which calls for the U.S. to pro-

vide for its self-defense needs." If the measure is passed, the U.S. will be able to sell Taiwan such weapon systems as Harpoon missiles, Stinger shoulder-fired missiles, and AIM-120 Advanced Medium Range AAMs, according to Taiwanese military sources. The measure conflicts, however, with President Clinton's policy which limits defense exports to Taiwan, and with the 1982 Joint Communiqué issued by the U.S. and China. Although the communiqué was never passed into law, it was designed to reduce defense sales to Taiwan to prevent an arms race in the Taiwan Strait. Many lawmakers cite China's recent military modernization, including the purchase of Russian-made Su-27 fighters and Kilo-class diesel submarines, as the impetus behind the measure. According to the article, the measure will go unchallenged when both houses meet to conclude the State Department authorization bill in 2/96.

Jason Glashow, *Defense News*, 1/15/96-1/21/96, pp. 3, 20 (5946).

THAILAND

THAILAND WITH UNITED STATES

1/96

Thailand submits a formal letter of offer and acceptance (LOA) to the U.S. Congress for its approval of an arms package which includes McDonnell Douglas (MDC) AGM-84 Harpoon ASMs. The LOA will be sent to Thailand for signature following U.S. Congressional clearance, which is expected in mid-2/96. According to sources "close to the negotiations," the deal should be finalized by 3/96.

Flight International, 1/24/96-1/30/96, p. 16 (5920).

1/25/96

The U.S. Department of Defense (DOD) notifies Congress that it intends to sell five Harpoon air-to-surface missiles to Thailand at a total cost of \$7.5 million. The Harpoon sale is part of a \$578 million U.S. arms transfer package to Thailand which also includes eight F/A-18 Hornet attack aircraft, four spare engines, and other lo-

gistical items. According to the DOD's Weapons Fact File of 1993, five Harpoon missiles are worth only \$3.6 million.

Arms Trade News, 2/96 (5895).

Late 1/96

Air Chief Marshal Siriphong Thongyai, commander-in-chief of the Royal Thai Airforce (RTAF), says the U.S. State Department has twice sent him a draft contract for the transfer of \$578 million worth of arms to Thailand, including Harpoon ASMs.

Bangkok Post (Bangkok), 1/29/96, p. 1; in FBIS-EAS-96-021, 1/29/96 (5723).

TURKEY

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TURKEY WITH UNITED STATES

11/29/95

Turkey asks Washington if it can co-produce the Army Tactical Missile System (ATACMS) with the U.S. The U.S. denies the request because of concerns about complying with the MTCR.

Reuter, 12/19/95; in Executive News Service, 12/20/95 (5840). Theresa Hitchens, *Defense News*, 12/4/95-12/10/95, p. 6 (5840).

12/28/95*

The Clinton administration announces that the U.S. intends to proceed with a \$132 million sale of 120 ATACMS to Turkey, the first sale of this system to a foreign customer. The administration announces the transfer following the expiration of a 15-day Congressional notification period. According to U.S. government officials, Turkey was previously denied access to ATACMS technology because of concerns about a possible MTCR violation. Although ATACMS has a range below the MTCR threshold, the missile system can be modified to travel 300 km. U.S. sources say the ATACMS systems to be sold to Turkey will be equipped with "special software to block modification of the missile to increase its

range." Although several members of Congress complain about the missile sale by citing Turkey's poor human rights record, the administration responds by asserting that the missiles are "unsuitable for internal use against Kurdish dissidents." U.S. administration officials also defend the sale by referring to Turkey's proximity to states such as Iran and Iraq.

Reuter, 12/19/95; in Executive News Service, 12/20/95 (5840). Theresa Hitchens, *Defense News*, 12/4/95-12/10/95, p. 6 (5840). *Arms Sales Monitor*, 12/5/95, p. 1 (5840). *Washington Post*, 12/15/95, p. 29 (5840). Charlie Kharalambous, *Cyprus Mail* (Nicosia), 12/28/95, p. 3; in FBIS-TAC-96-002, 12/28/95 (5840). *Cyprus Newsletter*, 12/31/95, pp. 1-2 (5840). *Flight International*, 11/29/95-12/5/95, p. 17 (5840).

UKRAINE

INTERNAL DEVELOPMENTS

12/28/95

The governing body of the Ukrainian Conservative Republican Party announces its opposition to the demolition of a Ukrainian strategic missile silo, which is scheduled to take place during a 1/4/96 meeting in Kiev between Russian Defense Minister Pavel Grachev, U.S. Secretary of Defense William Perry, and Ukrainian Defense Minister Valeriy Shmarov. The Conservative Republican Party asserts that the demolition of missile silos is aimed at leaving Ukraine "defenseless" against the threats of neocolonialism and imperialism.

Interfax (Moscow), 12/28/95; in FBIS-TAC-96-001, 12/28/95 (5724).

1/3/96

A multi-party group of Ukrainian parliamentarians write to President Leonid Kuchma to protest against the planned destruction of an ICBM silo on 1/5/96. The parliamentarians argue the destruction will cause "economic, environmental, and military damage" and will compromise Ukraine's national security.

Iryna Kotova, *Intelnews* (Kiev), 1/5/96; in FBIS-SOV-96-004, 1/5/96 (5867). *Unian* (Kiev), 1/4/96; in FBIS-SOV-96-004, 1/4/96 (5867).

1/10/96

Ukrainian Defense Minister Valeriy Shamarov says it would be a "reckless adventure" for Kiev to keep its ICBM nuclear warheads and missile silos when there is no chance that Ukraine will use or maintain them.

Ukrinform (Kiev), 1/11/96; in FBIS-SOV-96-008, 1/11/96 (5878).

**UKRAINE WITH:
PRC, 153
Russia, 155**

UKRAINE WITH UNITED STATES

11/95

U.S. and Ukrainian representatives plan to meet to negotiate an agreement for launching Ukrainian Zenit rockets from sea-based launch sites, as part of an international endeavor headed by the U.S.'s Boeing Co. The Sea Launch project will cost approximately \$500 million, most of which will be provided by Western organizations. The project will probably need to comply with the space launch agreement that is in the process of being negotiated between Ukraine and the U.S.

Space News, 11/6/95-11/12/95, p. 2 (5716).

Mid-11/95

The U.S. Defense Nuclear Agency (DNA) grants a \$933,845 contract to the U.S.'s General Atomics to draw up a plan for eliminating Ukraine's SS-24 solid rocket motors using "an advanced cryogenic washout technology." The technology employs high pressure liquid nitrogen to separate the propellant into small parts inside the rocket motor. The washout system was developed by General Atomics with assistance from the Joint Ordnance Commanders Group and the U.S. Air Force Armstrong Laboratory Evronics Directorate at Tyndall Air Force Base. According to General Atomics, no special handling of the waste is necessary because the liquid nitrogen evaporates during the process. Alliant Techsystems/Global Environmental Solutions, PaR Systems, Sweet Analysis Services, Inc., Orbita Ltd., and General Atomics, will implement the project over a period of seven months at a production

facility in "Pavlogras," Ukraine.

Post-Soviet Nuclear & Defense Monitor, 11/17/95, p. 14 (5710).

UNITED ARAB EMIRATES

INTERNAL DEVELOPMENTS

1/96*

Dubai's Magellan Systems is selling a \$500 basic version of a Global Positioning System (GPS) receiver which uses Arabic graphics and keypads. The 400 g, battery-operated, military Pioneer version of the Trailblazer XL GPS receiver meets MIL-STD-810D and is intended to complement the Nav1,000M5 Hawk receiver; this will allow for distribution to the section/vehicle level. Vehicle installations and external antennas are optional. The graphics can be converted into English with a basic keyboard operation.

International Defense Review, 1/96, p. 18 (5845).

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**UNITED ARAB EMIRATES WITH
UNITED KINGDOM**

1/96*

The UAE clears two members of the Hakim family of air-to-surface weapons, developed by GEC-Marconi Dynamics, for entry into service. The 227 kg PGM-1 is a rocket-assisted laser-guided bomb and the rocket-powered 900 kg PGM-2 is equipped with a television seeker and a datalink to the launch platform. The PGM-1 and PGM-2 were tested successfully in 10/95 and 11/95. These tests may persuade the UAE to acquire the PGM-3 and PGM-4 versions currently under development with GEC-Marconi Dynamics. The PGM-3 is similar to the PGM-2 but with a longer range, and the turbo-powered PGM-4 has a range, just under the MTCR's 300 km-range parameter. GEC-Marconi Dynamics has proposed the Pegasus variant of the PGM 4 as a contender for the U.K.'s CASOM re-

quirement. The U.K.'s Defence Export Services Organisation reportedly favors Pegasus as the CASOM choice and is expected to support British participation in the UAE program, which could lead to greater sales in the Gulf. GEC-Marconi Dynamics may develop a long-range anti-ship version of the Hakim in the future and may also design a variant with a dual passive/active radar seeker.

Jane's International Defense Review, 1/96, p. 6 (5844).

**UNITED ARAB EMIRATES WITH
UNITED STATES**

11/25/95*

The U.S. firm McDonnell Douglas is likely to bid for the UAE's stand-off missile requirement. McDonnell Douglas is also preparing to sell its AGM-86 Stand-off Land Attack Missile (SLAM) technology to other states in the Gulf, pending clearance from the U.S. government. According to an official from McDonnell Douglas, his company is confident the U.S. government will permit the release of SLAM technology to the region in the near future.

Jane's Defence Weekly, 11/25/95, p. 16 (5669).

UNITED KINGDOM

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UNITED STATES

INTERNAL DEVELOPMENTS

12/7/95

CIA Director John Deutch writes to U.S. Senator Carl Levin (D- Michigan) to inform him that Congress's defense authorization bill for 1996 overemphasizes the future missile threat to the U.S. Republican legislators accuse the CIA of providing Levin with the information in order to bolster his arguments against the deployment of a national missile defense system during Congressional deliberation of the 1996 defense authorization bill. In the letter, Deutch tells Levin that nations are very unlikely to export ICBMs in the future and that the U.S. can detect an indigenous ICBM development program several years in advance. According to intelligence sources, however, a North Korean missile test "went virtually undetected" in 1993, raising anxieties regarding U.S. detection capabilities. Deutch's letter refers to information included in the CIA's classified 1996 National Intelligence Estimate (NIE), titled "Emerging Missile Threats to North America During the Next 15 Years," which asserts that no country, except the principal declared nuclear powers, will be able to develop or otherwise obtain a ballistic missile capable of threatening the "contiguous 48 states or Canada" in the next 15 years. The estimate asserts that U.S. intelligence agencies "have no evidence that Iran wants to develop an ICBM," and that the probability of North Korea acquiring missiles capable of targeting Alaska in five years is "very low." Several Republican U.S. Congressmen who favor deploying a national defense to protect against limited missile attacks say the NIE has been politicized by the Clinton administration because of its opposition to Republican plans for deploying a small number of anti-missile systems designed to intercept ballistic missiles that might be launched at the U.S. by rogue states. Missile defense supporters assert that a ballistic missile threat to

the U.S. is likely to emerge in the near future.

Rowan Scarborough and Bill Gertz, *Washington Times*, 1/30/96, pp. A1, A14 (5738). Jim Adams, *Reuter*, 12/12/95; in *Executive News Service*, 12/13/95 (5776).

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VIETNAM

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YEMEN

INTERNAL DEVELOPMENTS

12/21/95

Yemen recently deployed "ground-to-ground missile ramps" on the Red Sea islands of Hanish al-Saghir and Jabal Zuqar, according to an anonymous diplomatic source.

AFP (Paris), 12/21/95; in *FBIS-NES-95-245*, 12/21/95 (5679).