

AN ANNOTATED CHRONOLOGY OF DPRK MISSILE TRADE AND DEVELOPMENTS

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INTRODUCTION¹

On July 8, 1994, Kim Il-sung,² the president of the Democratic People's Republic of Korea (DPRK) since its founding, died of an apparent heart attack. The resultant political transition adds a new element of uncertainty to an already dangerous DPRK equation. Kim Il-sung is succeeded by his son Kim Jong-il, an unproven leader known mostly for his linkage to the 1983 bombing of the Republic of Korea (ROK) cabinet in Rangoon, Burma. The Bush administration's National Security Advisor, Brent Scowcroft, indicated that U.S. officials might conclude from Kim Jong-il's psychological profile that he is "more susceptible to rash acts, making the current nuclear crisis 'a particularly dangerous time.'"³ The North Korean nuclear crisis first came to a head in March 1993 when the DPRK announced its withdrawal from the Nuclear Non-Proliferation Treaty (NPT). Much of the attention has been deservedly devoted to the possibility of a DPRK nuclear weapons program, but what tends to be overlooked is the important threat posed by North Korea's continuing development and proliferation of ballistic and cruise missiles. It is frightening to think of the DPRK armed with a nuclear weapon, but doubly so if one considers that P'yongyang already has an effective means of delivery at its disposal and is now being led by a person who may well consider using it.

Although the issues of weapon and delivery system are integrally linked, they are seldom treated as such by the Western press. Through this chronology, it is our intention to shed light on the missile aspect of the DPRK threat. This chronology is a compilation of information from a wide variety of open sources, which include

primary sources, periodicals, newspapers, and professional journals.

A review of the data provided in the chronology leads to several general conclusions about North Korean missile trade and developments:

◆ **Rationale for Missile Development.** The DPRK, in common with many developing countries, originally turned to missile forces to compensate for its Air Force's lack of a long-range strike capability. While this was originally the case, the demand for short- and medium-range missiles during the Iran-Iraq War demonstrated the profit potential in the sale of such systems. With North Korea becoming increasingly isolated—as former allies stopped subsidizing sales of needed commodities and as Western nations intensified pressure because of the DPRK's proliferation threat—the DPRK's missile sales have become a valuable means of acquiring hard currency and desperately needed commodities such as oil.

◆ **Production and Deployment.** Full-scale production of the *Scud-C* began in 1991 after a period of limited production. At an estimated rate of 100 missiles per year, the DPRK may have produced in excess of 400 *Scud-C*s to date. While as many as 320 of these may have been exported to Iran and Syria, the DPRK still has a considerable stock of ballistic missiles. North Korea has at least one *Scud-C* brigade, however, the number of missiles in the DPRK inventory is more than sufficient to field two functional *Scud-C* brigades. As no *Nodong* missiles have yet been exported, the DPRK may also have enough of these longer-range systems to field a *Nodong-1* brigade. With development of the *Nodong-1* nearing completion, and additional, longer-

range missiles apparently entering development, the DPRK is well on its way to becoming a ballistic missile power to be reckoned with.

◆ **Command and Control.** A number of factors indicate that the DPRK's ballistic missiles fall under Air Force, rather than Army, command and control. The original purpose for missile development was to add a long-range strike capability to the Korean People's Army (KPA) to compensate for its weak and obsolescent Air Force. As the missiles were essentially assuming an air force mission, they may have been placed under the Air Force's command. In this regard, it is significant that the DPRK delegation sent to Iran in February 1994 to discuss, among other things, the testing of *Nodong-2* in Iran, was led by General Cho Myong-rok, Commander of the DPRK Air Force. It should also be noted that Iranian ballistic missiles fall under the command and control of the Air Wing of the Iranian Revolutionary Guard Corps (IRGC). As Iran and the DPRK have maintained close relations, especially concerning ballistic missiles, and have exchanged experience in wartime missile use and deployment, it would not be surprising if the DPRK mirrored the Iranian ballistic missile command and control structure.

◆ **Development.** The range of each successive system seems to be double that of the previous one. This is likely due to the fact that the first system, *Scud-B*, had to be reverse engineered before it could enter testing and production. Initially, the development time from concept to testing seemed to be diminishing, but the DPRK has met with only limited success with the *Nodong-1*. All of the follow-on systems, culminating in the *Nodong-1*⁴, have been variations of the basic *Scud* missile, hence the shorter development times. However, with the *Nodong-1*, the DPRK has likely reached the developmental limits of *Scud* technology.

◆ **Testing.** North Korean missile testing has followed a fairly consistent pattern. The first successful test of the *Scud-B* was in April 1984. Pilot production began in 1985, increasing to full-scale production in 1987. The first successful test of the *Scud-C* was in June 1990. Full-scale production began in 1991. If the general pattern continued, the *Nodong-1*, which was successfully tested in May 1993, may have entered full-scale production in early 1994. If so, the DPRK may already have a fully equipped *Nodong-1* brigade.⁵ Since 1984, there have been at least 17 reported DPRK missile tests of all systems, of which almost half have failed. From April to September 1984, there were three successful

and four or more unsuccessful tests of the *Scud-B* missile, which represents a success rate of less than 50 percent. There is also one report that eight DPRK-made *Scud-B*s deployed by Iran during the "War of the Cities" exploded on launch.⁶ The *Scud-C*, composed of the same basic technology as the *Scud-B*, seems to have benefitted from the failures of its predecessor; during its test phase, five successes and only one failure were reported. There are signs, however, that the DPRK may be having problems with the *Nodong-1*, as indicated by the number of canceled and postponed tests.

◆ **The May 1993 *Nodong-1* Test.** One of the missiles tested on May 29-30, 1993, believed to be a *Nodong-1*, traveled only 500 km although the system is believed to have a range of 1,000 to 1,300 km. Most analysts have concluded from this that the test was merely for demonstration purposes. However, closer examination of the test reveals a number of other possibilities. The reported flight path and distance travelled indicated that the missile impacted over the Yamato Ridge in the Sea of Japan. The fact that it landed in shallow water and the presence of two DPRK ships, a *Najin*-class frigate and a minesweeper, suggests that the DPRK intended to recover the missile. This is further supported by the fact that no telemetry was intercepted, an indication that an on-board data recording device may have been employed, which would necessitate recovery for post-flight analysis. Furthermore, the Sea of Japan is too constrictive an area to conduct a full-range test of the *Nodong-1*. Future testing of this system is likely to be conducted in Iran, a country with the necessary test facilities and the open space required for a full-range test.

◆ **Financial and Technical Assistance.** There is no evidence of a successful North Korean missile project that was completely indigenous. All significant DPRK development successes have been achieved with outside financing and/or technological assistance. Iran is a good example of the former, while Russia is an example of the latter. When outside support has been lacking, DPRK missile programs have slowed down or stalled completely. This is apparently the case with the *Nodong* program at present. As with the *Scud-B* and *Scud-C* programs, Iran appears to be the primary financier of the *Nodong* program, and the recent reduction of Iranian support has resulted in a succession of postponed and canceled tests.

◆ **The Iranian Factor.** Iran is the primary financial supporter of North Korea's missile development pro-

gram. The Iran-DPRK relationship dates back to 1983 when Iran agreed to fund the reverse engineering of *Scud-B* missiles in exchange for the option to purchase production models. There are two interesting aspects of the Iran-DPRK relationship: Iran's use of oil to purchase missiles, and the potential use of Iranian test-sites for DPRK missiles. North Korea has been in perpetual need of oil since the end of favorable pricing resulting from the dissolution of the Soviet Union and the People's Republic of China's (PRC) recent demands for hard currency as payment. Iran's offer of oil for missiles allowed the DPRK to obtain needed oil without depleting its scarce reserves of hard currency. The restructuring of the DPRK debt to Iran in 1987 allowed the DPRK to pay off its debt in goods rather than cash, a deal further favoring the continued export of missiles to Iran. The May 1991 test-launch of a *Scud-C* missile at Qom in Iran opened up a new phase in the Iran-DPRK relationship. In late 1993, the DPRK appeared ready to use Iran's Lut Desert as a test site for the *Nodong-1*. However, international pressure seems to have put an end to joint testing for the time being.

◆ **The Russian Factor.** Just as German scientists helped the fledgling American and Soviet rocket programs in the 1940s and 1950s, Russian scientists may be playing a major role in assisting the DPRK to overcome its development challenges. Reports concerning Russian involvement in DPRK missile development date back to a late 1980s study by the Communist Party of the Soviet Union (CPSU). More recently, there is reliable evidence of a concerted DPRK effort to recruit Russian experts for their missile programs. The new technologies that the DPRK will have to master in order to field the *Taep'o-dong* and subsequent series of missiles will increase the development time considerably. However, the DPRK may be able to substantially reduce the development time with outside assistance, particularly from mercenary specialists from the former Soviet republics. Although many specialists have been stopped in transit to the DPRK, Russian authorities acknowledge that, given the number of people with missile development expertise, it is almost impossible to control their movements. There are reports of at least 17 Russian missile scientists currently working in the DPRK, and indications that some scientists remaining in Russia are passing information to the DPRK via electronic mail.⁷ The knowledge and experience of these Russian experts could significantly reduce the time needed to develop the staging and reentry technologies required for longer-range

missile systems such as *Taep'o-dong*.

◆ **The Nature of Deliveries.** Initial deliveries of North Korean missiles to customers in the Middle East consisted of complete systems, but more recent deliveries have been in the form of "knock-down" kits and associated production-assembly equipment. For example, the DPRK may currently be transferring equipment that will allow Iran to become an indigenous producer of medium-range ballistic missiles, a development certain to have far-reaching proliferation consequences.

◆ **The Mode of Delivery.** Deliveries of missiles to Iran and Syria, the major recipients of DPRK missiles, have shifted in two ways. First, as Western resistance to the deliveries has increased, shipments have begun to be made by air rather than by sea. In some instances, this has been accomplished with private sector Russian assistance, calling into question the Russian government's ability and/or willingness to control DPRK missile proliferation.⁸ The change in delivery methods will allow for more rapid deliveries and make interception of shipments more difficult.

◆ **Implications.** North Korea's *Scud-C* brigade/brigades give it the capability of striking South Korea's rear areas and U.S. staging areas around Pusan. This is a capability that the North did not have during the Korean War, which could substantially influence the course of future conflicts on the Korean Peninsula. With a brigade of *Nodong* missiles, the DPRK could threaten western Japan, as well as Beijing and the Russian Far East. The intermediate-range missiles now in the design stage, *Nodong-2*, *Taep'o-dong-1*, and *Taep'o-dong-2*, would allow North Korea to threaten the entire western Pacific region, and, if transferred to Iran, Syria, or Libya, would threaten all of Europe. North Korea's continued development of intermediate-range missiles could lead to a strategic arms race in Northeast Asia. South Korea and Japan could respond to this impetus by either establishing a missile defense system or a ballistic missile deterrent force. Given the unreliability of current missile defense systems, as seen in the Gulf War, South Korea and Japan may find it necessary to develop their own delivery systems to strike North Korea's rear areas. Furthermore, if North Korea continues its parallel development of nuclear weapons and mates them to its intermediate-range missiles, South Korea and Japan may go nuclear as well.

In the near-term, the prospects for the DPRK's missile program appear somewhat tenuous, given its dependence on outside financing and foreign technologi-

cal assistance. Should Iran, the sole source of development funding, choose to suspend financing of the program, future development would almost certainly stall. The developmental leap from the current single-stage systems to more complex multi-stage, intercontinental systems cannot be achieved without external technological assistance. Some of this assistance is probably being provided by Russian specialists, both in the DPRK and Russia. Russia may be able to stem the tide of emigration, but it is unable to completely halt the leakage of information. Unless something drastic occurs, the North Korean missile program is likely to continue to progress, producing longer and longer range systems until ultimately the DPRK has an indigenously produced ICBM. A declassified CIA report states that "at a minimum, North Korea would require nearly ten years to develop an ICBM capable of delivering a chemical or biological weapon warhead and ten to fifteen years to develop an ICBM to carry a nuclear warhead."⁹ These figures seem optimistic if the Russian assistance to the DPRK missile program is factored in.

Even if the threat posed by the DPRK itself is controlled, past exports of missile production equipment and the establishment of production facilities in Syria and Iran will continue to pose a major threat to regional stability in the Middle East. CIA Director James Woolsey addressed this danger in testimony before the U.S. Congress in July 1993 when commenting on the threat posed by the *Nodong-1* missile. Woolsey stated, "With this missile, North Korea could reach Japan; Iran could reach Israel; and Libya could reach U.S. bases and allied capitals in the Mediterranean Region."¹⁰ The effects of North Korea's production and proliferation of missiles and missile technology promise to extend well into the future.

List of Terms

AOI	Arab Organization for Industrialization
ATBM	anti-tactical ballistic missile
BAe	British Aerospace
BBC	British Broadcasting Corporation
BMDO	Ballistic Missile Defense Organization (U.S.)
BND	Bundesnachrichtendienst (Federal Intelligence Service of Germany)
CEP	circular error probable (or probability)
CIA	Central Intelligence Agency (U.S.)
CPSU	Communist Party of the Soviet Union
DIA	Defense Intelligence Agency (U.S.)
DMZ	demilitarized zone (the zone separating the ROK and the DPRK)
DPRK	Democratic People's Republic of Korea (North Korea)
EAR	Export Administration Regulations (U.S.)
FROG	free rocket over ground
GDR	German Democratic Republic (East Germany)
HE	high explosive
HY	Hai Ying "Sea Eagle" (PRC anti-ship missile)
IAEA	International Atomic Energy Agency
ICBM	intercontinental ballistic missile
IRBM	intermediate-range ballistic missile
IRGC	Iranian Revolutionary Guard Corps (Pasdaran)
JDA	Japanese Defense Agency
KCNA	Korean Central News Agency (DPRK)
KPA	Korean People's Army (Inmingun, DPRK)
MFN	most favored nation (trading status)
MITI	Ministry of International Trade and Industry (Japan)
MRL	multiple rocket launcher
MTCR	Missile Technology Control Regime
NBC	nuclear, biological, and chemical
NPT	Nuclear Non-Proliferation Treaty
PRC	People's Republic of China
R & D	research and development
ROK	Republic of Korea (South Korea)
SLBM	submarine launched ballistic missile
SSB	ballistic missile submarine
SSM	surface-to-surface missile
TEL	transporter-erector-launcher
U.K.	United Kingdom
U.N.	United Nations
UNDP	United Nations Development Programme
U.S.	United States
USSR	Union of Soviet Socialist Republics

CHRONOLOGY¹¹

1960s and 1970s

early 1960s

The DPRK begins production of a version of the Chinese *Type 63* 107 mm MRL.¹²

1968-69

The DPRK takes delivery from the USSR of *S-2 Sopka* (*SS-C-2b Samlet*) coastal defense missiles sufficient to outfit five batteries. The missiles are deployed on the east coast of the DPRK where they replace coastal artillery.¹³

Note: The standard Soviet *S-2* battery consisted of six mobile launchers.

1969-70

The PRC assists the DPRK in the reorganization and expansion of the Soviet-built *Samlet* maintenance and assembly facilities. The DPRK acquires and fields the PRC-built *HY-1* (a reverse-engineered Soviet *SS-N-2 Styx* missile). Some *HY-1* deliveries are made directly from PRC naval stocks, and some are shipped as "knock-down" kits for DPRK assembly.¹⁴

late 1960s

The DPRK takes delivery of Soviet *BM-21* 122 mm MRLs.¹⁵

early 1970s

Soviet deliveries of *Samlet* missiles continue. The missiles are supplied in "knock-down" kits, which the DPRK military has been trained to assemble and test. However, the USSR refuses to supply more modern missiles due to political differences. This leads the DPRK to approach the PRC for assistance, which it receives in the form of transfers of reverse-engineered Soviet-designed missile systems and PRC missile research and development technology.¹⁶

Note: The delivery of missiles in "knock-down" kits foreshadows the DPRK's own deliveries of missiles to Iran and Syria in the late 1980s and early 1990s. The refusal of the USSR to supply more modern missiles explains why the DPRK was eventually forced to obtain *Scud-B* missiles from Egypt (see entries 1976 and 1981).

early 1970s

The DPRK receives assistance from the PRC in the reorganization of Soviet established maintenance and assembly programs for *SA-2*, *SS-C-2b*, and *FROG-5* (maintenance only) missiles, which is "quickly followed" by the delivery of PRC-reverse-engineered *SA-2 (HQ-2)* and *SS-N-2 (HY-1)* missiles.¹⁷

Note: The nomenclature in parentheses refers to the PRC designation for the missiles.

1972

The DPRK establishes an indigenous *SY-1/HY-1* production facility. However, many major components are still provided by PRC factories.¹⁸

(1973)

It is reported that the DPRK possesses 24 *FROG-5* and -7 SSMs, as well as six *Samlet* SSM sites. The DPRK Navy includes 10 *Komar*-class and eight *Osa*-class missile boats armed with *Styx* anti-ship missiles.¹⁹

Note: In 1974, it is reported that the DPRK only possesses twelve *FROG-5* and -7 SSMs and no *Samlet* sites.

1974-75

The DPRK *HY-1* production facility is converted to produce *HY-2* missiles.²⁰

4/75

DPRK leader Kim Il-sung travels to Beijing where Kim's defense minister Oh Jin-u expresses the DPRK's wish to purchase tactical ballistic missiles from the PRC. The PRC does not have that class of missile at the time, but the DPRK query coincides with growing PRC interest in developing such a missile.²¹

mid-1970s

The DPRK begins production of Soviet model *BM-21* 122 mm MRLs.²²

mid-1970s

The DPRK begins a program to reverse engineer *Frog-7A* rockets. The program is eventually canceled when the DPRK begins its *Scud-B* reverse engineering program.²³

1976

The DPRK purchases two *Scud-B* missiles from Egypt.²⁴
Note: There is conflicting information on whether the DPRK received its first *Scud-B*s from Egypt in 1976 or 1981 (see entry 1981). The 1981 date is more likely given the lack of reported missile development in the DPRK until the 1980s.

1976

It is believed that full-scale production of the *HY-2* missile begins.²⁵

late 1976

The PRC agrees to the 4/75 DPRK proposal for the joint development of the *DF-61* single-stage mobile tactical missile, which might carry a cluster munitions or fuel-air explosive warhead. The maximum range of the missile is estimated at 600 km with a 1,000 kg payload, with guidance to be supplied by a new PRC-developed gyro.²⁶

3/77

Korean Worker's Party Secretary Kang Song-san attends a reception hosted by the PRC's Seventh Machine Industry Ministry, which develops the PRC's ballistic missiles.²⁷

1978

The joint PRC-DPRK *DF-61* missile project collapses when its primary Chinese supporter Chen Xilian is ousted.²⁸

Note: While the program was never completed, the DPRK technicians and scientists who worked on the project may have brought back valuable knowledge on missile design. Given that the Chinese acquired restricted missile information during training with the Soviets in the 1960s, it is plausible that the DPRK might have duplicated this feat while working with the Chinese. The knowledge and expertise acquired may have proven valuable in the *Scud-C* program, a missile not unlike the *DF-61*, and in subsequent missile programs as well.

1979

Negotiations begin between the DPRK and the UNDP for the construction of a digital bi-polar integrated circuit plant in the DPRK.²⁹

Note: This technology is a good first step towards an indigenous integrated circuit capability, which might find application in missile guidance, control, and navigation.

early 1980s

The DPRK is indigenously producing all parts of the PRC *HY-2* missile except for the sustainer motors and guidance systems, which are still provided by the PRC.³⁰

1980

Replacement of the *HY-1* by the *HY-2* missile is believed to be completed.³¹

1981

The DPRK and Egypt agree to cooperate on the development of ballistic missiles, and Egypt transfers to the DPRK Soviet-built *Scud-B* missiles and *MAZ 543* TELs.³²

Note: It is believed that none of the transferred missiles were ever test-fired or deployed, but they may have been used for system familiarization and training. It is also possible that the missiles, generally thought to have been indigenously produced *Scud-B* prototypes test-fired in 1984, were in fact missiles obtained from Egypt in 1981.

8/21/81

Egypt and the DPRK sign an agreement for technological cooperation and exchange through 1983. The technology in question may have included missile-related technologies.³³

1983

4/5/83

Egyptian President Hosni Mubarak signs an agreement in P'yongyang that extends the 1981 technological exchange agreement and discusses arms purchases. The agreement contains several references to "other fields as to be agreed upon by the governments of the two countries."³⁴

Note: The elastic clause would allow the pursuit of fields of cooperation such as missile development.

9/6/83

Egyptian Defense Minister Marshal Abdal-Halim Abu Ghazhala, leading a military delegation, arrives in P'yongyang.³⁵

10/26/83

Iranian Prime Minister Musavi and Defense Minister Colonel Mohammed Salimi return from a three-day visit to the DPRK during which arrangements were made for the long-term Iranian financing of the DPRK *Scud-B* development program in exchange for the option to purchase production models.³⁶

1984

4/84

The DPRK conducts its first successful test of the *Scud-B* missile. During 1984, additional tests are conducted with at least two known failures.³⁷

(9/84)

Since the 4/84 test-launch, there have been at least two additional confirmed launches of DPRK-built *Scud-B* prototypes from the Nodong test facility, including one this month. There are indications that there were also launch failures during this same period.³⁸

10/84

Yuri Geifman and Iranian businessman Babeck Seroush are indicted in New York for conspiracy to smuggle components used in missile guidance to the DPRK.³⁹

11/9/84

DPRK Defense Minister Oh Jin-u arrives in Egypt for a 12-day visit during which an agreement to provide technical assistance to the Egyptian *SA-2b Mod 1* SAM program may have been reached.⁴⁰

1985

In a bilateral accord, Iran agrees to finance the reverse engineering of the *Scud-B* by the DPRK and offers assistance in the covert procurement of Western critical technologies in exchange for production technology and missiles.⁴¹

Note: It is unclear whether this accord has been confused with the one referred to on 10/26/83, or if it is a refinement, extension, or codification of that agreement.

1985

Pilot production of the *Scud-B* is believed to have begun, replacing that of the DPRK's *Scud-B* prototype. A special DPRK missile unit, derived from a special test and evaluation unit believed to have been stationed at To-kol, is established.⁴²

1986

The special DPRK missile unit becomes operational.⁴³

12/86

The UNDP transfers control of the completed integrated circuit pilot factory, the P'yongyang Semiconductor Manufacturing Factory, to the DPRK's Electronics Institute.⁴⁴

12/7/86

The Iranian parliament restructures all of the DPRK's \$170 million oil purchase debt to Iran. The debt will be paid back over the next five years starting retroactively from 1/85. During this period, Iran will deduct 70 percent of the cost of DPRK merchandise purchased from the debt, paying only the remaining 30 percent in cash.⁴⁵

Note: For further information on Iran-DPRK oil-for-missile deals, see entries 3/91, 3/28/93, and 6/25/93.

1987

Scud-B production facilities are established near P'yongyang with an annual capacity of 50 missiles.⁴⁶

1/28/87

ROK Defense Minister Yi Ki-paek announces that the DPRK has conducted a secret test of a long-range guided missile [*Scud-C* prototype] north of the city of Wonsan in Hamgyong-Namdo. Defense Ministry officials refuse to release details of the missile test.⁴⁷

4/15/87

Chongnyun chairman Han Tok-su visits the underground 18 January Machine Plant located in Kagam-ni, Kaechon County, South Pyongan Province, where missiles, tanks and motors are produced.⁴⁸

6/87

In response to a Reagan administration protest over the sale of *HY-2 Silkworm* missiles to Iran, the PRC denies that it made the sale, indicating that the missiles originated in the DPRK.⁴⁹

6/87

As a continuation of their 1985 bilateral accord, Iran and the DPRK complete a \$500 million military assistance agreement, which includes the purchase of 90 to 100 DPRK *Scud* missiles, 12 TELs, and an unknown number of DPRK-built *HY-2 Silkworm* missiles.⁵⁰

6/10/87

The DPRK denies Western press reports that it is acting as a conduit for PRC *Silkworm* missile deliveries to Iran.⁵¹

7/87

Deliveries of *Scud-B* missiles from the Iranian order begin. The deliveries are believed to have been made by sea.⁵²

11/87

U.S. intelligence satellites spot *Silkworm* missiles at a DPRK port.⁵³

12/14/87

U.S. intelligence satellite photographs reveal that the *Silkworm* missiles spotted in 11/87 are now gone, as is an Iranian vessel that is known to have made previous *Silkworm* deliveries to Iran.⁵⁴

1988

Iran begins limited-scale assembly of DPRK *Scud-B* missiles from “knock-down kits” at the facility near Isfahan, Iran’s largest ballistic missile plant.⁵⁵

1988

The DPRK establishes a *Scud-B* regiment within the IV Corps in the southwest of the country. One source indicates that the DPRK deploys *Scud-C* missiles at Singye, northern Hwanghae Province, which is located in the II Corps area.⁵⁶

Note: As noted in entries 6/90, 1991, and 10/91, the DPRK has established a missile base within 50 km of the DMZ. As Sariwon, the city most often cited in reference to this base, lies over 100 km from the DMZ, Singye, which is almost exactly 50 km distant, would appear to be a more likely location. However, it is unlikely that the DPRK had operational *Scud-C* missiles to deploy at this time.

1988

The DPRK begins its *Scud-B* upgrade [*Scud-C*] program to double the missile’s range to 600 km.⁵⁷

Note: See 1989 entry for initial production information.

1/88

Iran purchases 40 *Scud-B* missiles from the DPRK. The missiles are employed during the War of the Cities from 2/88 to 4/88.⁵⁸

Note: These missiles may be part of the 6/87 purchase rather than an additional purchase. This may also be a reference to one of the missile deliveries taking place from 7/87 to 2/88.

1/19/88

The DPRK denies allegations in the U.S. media that Chinese-made *Silkworm* missiles are being supplied to Iran via the DPRK.⁵⁹

early 2/88

Deliveries from the 6/87 DPRK *Scud-B* sale to Iran are completed.⁶⁰

late 2/88

According to British and U.S. military sources, the Iranian ship *Iran Teyfour* delivers 80 *HY-2 Silkworm* and 40 *Scud-B* missiles from the DPRK and the PRC to the Iranian port of Bandar Abbas.⁶¹

4/14/88

Iranian First Deputy Defense Colonel Rahimi states, “We have also succeeded in manufacturing missiles with a range of 324 km.”⁶²

Note: The range given is consistent with a DPRK-upgraded *Scud-B* missile. This could be an indicator that Iran is assembling the *Scud-Bs* from components delivered from the DPRK rather than receiving whole systems.

10/88

Partially in response to DPRK efforts to acquire missile technology, the Japanese MITI bans the export of missile-related components abroad.⁶³

Note: This export control effort is indicative of Japan’s growing concern over the DPRK’s missile development program. Unfortunately, the controls failed to prevent DPRK acquisition of some components (see entries 1989 and 1/14/94).

late 1988

The DPRK and Iran establish a secret joint military commission to facilitate military cooperation.⁶⁴

1989

The DPRK begins development of the *Nodong* IRBM.⁶⁵

1989

Anritsu Corp., Yokohama Machinery Trading Co., and one other Japanese company allegedly sell spectrum analyzers to the DPRK via the PRC.⁶⁶

1989

Pilot production of the DPRK *Scud-C* begins.⁶⁷

Note: *Scud-C* production is believed to have supplanted *Scud-B* production. However, if one considers that a successful test of the *Scud-C* is not reported until 6/90, *Scud-C* production at this time is likely to have been quite limited.

1989

According to retired Israeli Brigadier General Aharon Levran, now an independent military analyst, Egypt turns to the DPRK for assistance in upgrading its arsenal of Soviet-supplied *Scud* missiles. The nature of the assistance is not known, but may consist of provision of spare parts or installation of improved components, including guidance.⁶⁸

Note: It has been five years since the Egypt-DPRK deals of the early 1980s (see entries 1981, 8/21/81, 4/4/83, 9/5/84, and 11/84). It is as yet unclear what brought on the five-year lapse in the relationship.

2/6/89

A CPSU Central Committee top secret report, special file number P147/75, states that “most recently, reports have begun to be actively circulated in the United States on the DPRK’s creation of a chemical warfare potential, using *missiles manufactured under license from us* as delivery systems. It has emerged from information from our embassy in P’yongyang that this report is not without foundation.”⁶⁹

Note: The question here is whether there was an actual USSR-DPRK contractual agreement for “licensed” production, or whether the alleged assistance was unofficial. The phrase “not without foundation” could be an indication of either possibility.

5/89

During a visit to the DPRK, Iranian Construction Minister Foruzesh and President Khamenei reportedly reach an agreement for the continued delivery of *Scud-B* missiles, and an extension of Iranian financing of the DPRK *Scud* development program.⁷⁰

Note: See entries 10/83, 1985, and 12/7/86 for details on DPRK-Iranian financial arrangements.

10/89

IRGC commander Mohsen Rezai travels to P’yongyang to meet with DPRK leader Kim Il-sung regarding final plans for the expansion of the Isfahan missile complex, and to address the development project for an extended-range *Scud-B* [*Scud-C*]. According to the *Iran Times*, Rezai said that he had “signed an agreement covering exchange of training and war experiences, transfer of military technology and weapons, and scientific cooperation.”⁷¹

Note: The exchange of “war experience” may be a reference to Iranian expertise gained by employing *Scud* missiles under combat conditions during its war with Iraq (see entry 1/88 and note in entry 1/12/93).

12/29/89

Israeli military sources say that Syria is approaching the DPRK for assistance in the development of SSMs after the PRC, under U.S. pressure, withdrew from a similar deal. The sources also indicate that Egypt and the DPRK are engaged in a project to develop a missile based on the Soviet *Scud* missile; part of this project is being developed in Egypt. Retired Israeli Brigadier General Aharon Levran says that published reports indicate that the DPRK is assisting Iran in the development of an indigenous SSM.⁷²

late 1980s

According to DPRK first lieutenant Yim Yong-son, who defected to the ROK on 8/11/93, the DPRK completed construction of two underground long-range missile launch bases, one at Mount [Komdok], Hwadae-gun, North Hamgyong Province and another at Okp’yong, Munch’on City, Kangwon Province.⁷³

Note: The locations given are near the *Scud* development facilities on the DPRK’s east coast. The sites are not related to the DPRK *Scud* regiment, which is reportedly located in the IV Corps area near Sariwon in the southwest of the country.

1990

early 1990

Iran purchases 20 *Scud-B* missiles from the DPRK.⁷⁴

early 1990

The DPRK conducts the first test of the *Scud-C* missile, which is reportedly unsuccessful.⁷⁵

5/90

A U.S. intelligence satellite photographs a new IRBM [*Nodong-1*], with an estimated range of 620 miles, on its launcher at the Musudan Range in Hwadae-gun in the eastern DPRK. Analyses of subsequent photographs of the launch pad reveal burn marks, which are believed to indicate that the missile exploded on the pad.⁷⁶

6/90

The DPRK conducts its first successful test of a *Scud-C*, launching from the Nodong test site south over the Sea of Japan.⁷⁷

(6/90)

Seoul Sinmun reports that the DPRK is constructing two missile launch sites in the DMZ. The construction

of these bases has reportedly been confirmed by a U.S. intelligence satellite.⁷⁸

Note: The bases are almost certainly not in the DMZ, but they may be bases for the SSM regiment reportedly located near Sariwon, about 50 km from the DMZ.

8/90

The USSR signs a contract with the DPRK for the provision of 200 rocket experts. The deal is reportedly called off in exchange for an ROK loan when the USSR normalizes relations with the ROK.⁷⁹

11/90

The U.S. detects preparations for a second test-launch of the DPRK IRBM [*Nodong-1*], but radar tracking ships positioned in the Sea of Japan, the likely impact zone, observe no launch.⁸⁰

11/29/90

A DPRK team led by the Minister of the KPA Oh Jin-u visits Tehran where they meet with senior Iranian officials, including the head of the IRGC Mohsen Rezaei and the Ayatollah's son Ahmed Khomeini. The visit culminates in a second series of agreements between the two nations, which is believed to include the purchase of the DPRK *Scud-C* missile and the conversion of a missile maintenance facility in eastern Iran into a production facility.⁸¹

Note: Oh Jin-u is the same official that visited the PRC in 1975 (see entry 4/75).

12/90

DPRK technical advisors arrive in Iran to fulfill the 11/29/90 conversion agreement. Iranian military officials are trained in the DPRK to manufacture and launch ballistic missiles.⁸²

12/90

The DPRK agrees to sell *Scud-B* and *Scud-C* missiles to Iraq.⁸³

12/90

An Israeli official comments that Syria, using the \$2 billion that it received for participation in the Gulf War, has purchased extended-range *Scud-C* missiles from the DPRK as part of a program to acquire advanced weapons systems.⁸⁴

1991

Full scale production of the DPRK *Scud-C* at four to eight units per month is reached.⁸⁵

early 1991

Initial prototypes of *Nodong-1* are believed to be completed.⁸⁶

1/91

Libya is allegedly financing a Syrian purchase of several dozen *Scud-C* missiles from the DPRK.⁸⁷

1/91

The ship *Al-Yarmouk*, co-owned by Jordan and Syria, departs the DPRK bound for Syria carrying 24 *Scud-C* missiles and 20 mobile launchers. The ship sails around the Cape of Good Hope, bypassing the Suez Canal, in order to avoid inspection by Coalition forces.⁸⁸

1/29/91

Iran's IRNA announces that "... from February 4 Iran's munitions industry will launch the production of its own long-range, powerful 'surface-to-surface' missiles."⁸⁹

Note: This production capability is probably a reference to the facilities at Isfahan that assemble missiles from DPRK components.

2/91

Iraqi Deputy Foreign Minister Saadoun Hamadi flies to P'yongyang in an attempt to speed the delivery of *Scud-B* and *Scud-C* missiles. The DPRK reneges on the 12/90 deal because Iraq is unable to pay in hard currency or oil.⁹⁰

3/91

Syria contracts for the delivery of more than 150 *Scud-C* missiles from the DPRK worth an estimated \$500 million. According to Western intelligence officials, the sale received Saudi Arabia's prior approval.⁹¹

3/91

The DPRK signs a five-year contract with Iran for the supply of 20,000 barrels of oil per day.⁹²

3/13/91

The *Al-Yarmouk* docks in Latakia, Syria laden with DPRK missiles; on the same day U.S. Secretary of State James Baker arrives in Damascus to meet with Syrian President Assad for the first time.⁹³

4/91

Anatoliy Rubtsov, a Russian solid-state physicist, is approached by the DPRK at a seminar in Beijing. Rubtsov is paid by the DPRK embassy in Moscow to recruit Russian scientists for work in the DPRK.⁹⁴

Note: For additional information on recruitment of Russian experts see entries 8/24/91, 2/92, 8/92, 10/92, 10/15/92, 12/8/92, 1993, 2/24/93, 11/15/93, 1/94, and 1/18/94.

4/13/91

The ROK Defense Minister reports that the DPRK possesses the *Nodong-1* SSM, a modified *Scud* missile that can reach any target in the ROK.⁹⁵

5/91

U.S. satellites observe the launch of a *Scud-C* missile from a mobile launcher near Qom in Iran. The missile flies 500 km before impacting south of Shahroud [Emamshahr] in the Salt Desert [Dasht-e Kavir]. The missile was assembled in Iran from components provided by the DPRK in a series of shipments tracked by Western intelligence agencies since 1/91. Iran has thus far purchased 170 *Scud-C* missiles, and is assembling them from “knock-down kits” at the Isfahan facility.⁹⁶

Note: This test may have been an Iranian test of the missile, a joint Iranian-DPRK test, or an early example of the DPRK making use of the larger test areas in Iran, as was later planned for *Nodong* in October or November of 1993. As to the 170 *Scud-C* missiles, it is unlikely that all 170 could have been delivered. According to production estimates (see entry 1991), the DPRK would not have been able to produce that many *Scud-Cs* by this time.

5/91

According to Israeli Ministry of Defense Director-General David Ivry, Syria takes delivery of a shipment of *Scud-C* missiles from the DPRK. The missiles were carried aboard a Yugoslavian freighter.⁹⁷

5/91

According to Bush administration officials, DPRK military officials visit Libya to negotiate the sale of a new 1,000 km-range IRBM [*Nodong-1*] at an estimated unit cost of \$7 million. Under the terms of the agreement, Libya is to finance development of the system in exchange for production models and related technology.⁹⁸

5/91

Mid-level DPRK diplomat Ko Yong-hwan defects to the ROK and reports that the DPRK has “vast underground

plants” for the manufacture of missiles and the testing of nuclear weapons.⁹⁹

5/31/91

Japan asks the DPRK to cease export of *Scud* missiles to Syria.¹⁰⁰

5/31/91

A senior Israeli military official tells reporters that Syria is spending between \$200 and \$400 million to acquire a brigade of *Scud-C* missile launchers by 1992, and is also interested in procuring “an indigenous missile production capability.”¹⁰¹

Note: This is probably just a confirmation of the 3/91 deal. Also, while the source only indicates launchers as part of the sale, given the amount of money involved, it likely that missiles are included as well. A brigade, going by the Soviet model, would consist of 12 to 18 launchers. See entry 8/4/93 for information on TEL deliveries to Syria.

Summer 1991

The DPRK ship *Mupo* departs Namp'o bound for Syria allegedly carrying eight launchers and an additional missile shipment as part of the Syrian order for 150 *Scud-C* missiles; the first 24 were delivered in 3/91.¹⁰²

6/91

According to Bush administration officials, a large shipment of DPRK *Scud-C* missiles arrives in Cyprus and is transferred to smaller vessels for transshipment to Syria.¹⁰³

6/91

U.S. intelligence agencies monitor up to 10 Soviet-made *Scud-C* missiles being delivered to the DPRK by rail. U.S. officials believe this may be an attempt to replenish stocks depleted by sales to Syria.¹⁰⁴

Note: This is not likely. The USSR refused to deliver *Scud-Bs* to the DPRK in the 1970s (see entry Early 1970s). Furthermore, the Soviet *Scud-C* was never deployed.

late 6/91

The BBC investigative television news program “Panorama” reports that a BAe/Arab Organization for Industrialization joint venture, Arab-British Dynamics, is cooperating with the DPRK in Egypt to develop and manufacture an extended-range version of the *Scud-B*. The report also cites unidentified “intelligence sources” as saying that the program is nearing the production stage.¹⁰⁵

7/91

According to the head of the ROK Agency for National Security Planning Suh Dong-kwon, the DPRK successfully test-fires a mobile *Scud-C* missile, with a range of 500 km, from a KPA base in Kangwon Province on the east coast of the DPRK; the missile reportedly strikes a target in the Sea of Japan. The mobile launch equipment consisted of a launcher, a transport vehicle, and a "lifting device" [crane]. Suh said that it is believed that the DPRK is capable of producing its own mobile launcher. He also said that the DPRK has stationed 36 *Scud-C* missiles with its regiment at Sariwon.¹⁰⁶

7/10/91

According to Iranian exile sources, an Iranian scientific and technical delegation travels to the PRC and the DPRK to negotiate an increase in the transfer of nuclear and ballistic missile technologies.¹⁰⁷

7/15/91

The ROK Ministry of Defense reports to the National Assembly that the DPRK has formed its first SSM brigade presumably armed with indigenously produced *Scud-C* missiles. It also indicates that the DPRK has produced more than 1,000 tons of chemical warheads for its missiles.¹⁰⁸

Note: It is quite possible that the DPRK produced enough *Scud-Cs* to both outfit the SSM brigade and fill the Syrian order of 1/91. Depending on when in 1991 full-scale *Scud-C* production began, the DPRK may have been able to outfit the brigade before filling the Syrian order.

7/25/91

Undersecretary of State Reginald Bartholomew confirms in testimony before Congressional subcommittees that the DPRK has sold *Scud* missiles to Syria and that "North Korea is emerging more and more as a major supplier of missiles of this type around the world."¹⁰⁹

8/91

Ko Yong-hwan, a mid-level DPRK diplomat and former interpreter for Kim Il-sung who defected in 5/91, identifies underground missile manufacturing plants where nuclear weapons tests are conducted. One is the 18 January Machine Plant in Kagam-ni, Kaechon County, South Pyongan Province. Another is at Mangyongdae, where ground-launched anti-ship missiles are produced.¹¹⁰

8/24/91

An unidentified Soviet military specialist, who had worked in the DPRK, says, "Having encountered great difficulties [in their efforts to build an atomic bomb], the North Koreans resolved to primarily emphasize their missile program."¹¹¹

8/25/91

A high ranking ROK intelligence official in the ROK Ministry of Defense states that the DPRK is expanding its improved *Scud* missile regiment into a brigade, and has developed and test-fired the *Nodong-1* missile. The brigade is reportedly located near Sariwon, 50 km from the DMZ, in the IV Corps area. The official also says that the DPRK has the capability to produce around 4,500 tons of chemical agent each year.¹¹²

Note: The intelligence official is probably reporting from the same document as the 7/15/91 entry.

(9/91)

The Egyptian government-controlled newspaper *Al-Ahram* reports that the DPRK has sold 300 *Scud* missiles to Iran and 20 *Scud* missiles to Syria, and that Libya has signed a contract for the purchase of an unspecified number of missiles.¹¹³

Note: There is also a report claiming that the 20 *Scud* missiles were actually delivered to Iran, but this is probably the same delivery (see entry 10/91).

9/91

DPRK Vice Prime Minister and Foreign Minister Kim Yong Nam denies allegations that the DPRK has sold missiles to Syria commenting that, "...the DPRK is not in a position to sell missiles, simply because we have no surplus in armaments to sell to the Middle East."¹¹⁴

late 9/91

According to Israeli intelligence, during a visit by Syrian Chief of Staff General Hikmat Shihabi to Tehran, Syria and Iran finalize an agreement for increased military cooperation, which may be part of Syria's ongoing efforts to acquire DPRK missile technology. The agreement may result in the Iranian financing of the construction of a SSM joint development and production center in Syria.¹¹⁵

Fall 1991

A prototype of a joint PRC-DPRK NBC-capable medium-range ballistic missile is reportedly tested at Yinchuan in the PRC.¹¹⁶

10/91

DPRK President Kim Il-sung visits Beijing to request PRC technical assistance in order to accelerate the DPRK nuclear weapons development program.¹¹⁷

10/91

The ROK Ministry of Defense considers purchasing four *Patriot* ATBM batteries following DPRK deployment of 36 *Scud-C* SSMs within 50 km of the DMZ.¹¹⁸

Note: The deployment is most probably a reference to the SSM brigade mentioned in entry 1991, and possibly to the launch sites mentioned in entry 6/90.

(10/91)

Western intelligence sources indicate that the DPRK has exported 20 *Scud* missiles to Iran, some of which have already arrived and are fully assembled. It reports that missiles bound for Syria will arrive in the near future.¹¹⁹

10/1/91

Ha'aretz reports that Iran is going to finance a DPRK *Scud-C* production facility in Syria for joint production. The DPRK is to build the facility.¹²⁰

10/28/91

The ROK 1991-92 defense white paper states that the DPRK has the ability to produce approximately 100 *Scud*-type SSMs annually, and has deployed additional *Scuds* and their related radar sites.¹²¹

11/30/91

According to 32-year-old Ko Chon-song, who defected from the DPRK in 6/93, an explosion took place at the Kanggye No. 26 General Plant at 2130 hours, killing approximately 200 workers and destroying a number of homes. The plant, the largest such underground facility in the DPRK, produced missiles, including the 200 km-range *Hwasong-1* SAM/AAM.¹²²

12/91

The DPRK ship *Mupo* returns to the port of Namp'o reportedly without delivering its cargo of missiles for Syria. The *Mupo* followed a circuitous route similar to that of the *Al-Yarmouk* out of fear of Israeli interception. However, there is some speculation that the *Mupo*'s cargo was transferred to another freighter at Gibraltar to complete its voyage to Tartus, Syria.¹²³

12/14/91

German intelligence service (BND) head Konrad Porzner tells *Jane's Defence Weekly* that the DPRK not only sells *Scud* missiles to other countries, but also assists in extending the range of these missiles and establishing production facilities for them.¹²⁴

1992

Pakistani officials are seen in the DPRK examining a prototype model of the *Nodong-1*.¹²⁵

early 1992

According to Western intelligence sources, Iran and the DPRK sign a joint development agreement for the *Nodong-1* missile. A Pentagon analyst speculates that the DPRK will need "a substantial input of foreign technology," especially with regard to guidance technology, in order to complete development of the new missile.¹²⁶

1/15/92

In testimony before the Senate Governmental Affairs Committee, CIA Director Robert Gates states that "North Korea's [nuclear and ballistic missile] programs are our most urgent national security threat in East Asia. North Korea has invested heavily in the military and depends on arms sales for much of its hard currency earnings." The DPRK has sold indigenously produced modified *Scuds* to Iran and Syria, and are not far from having a more advanced missile with a range of at least 1,000 km [*Nodong-1*].¹²⁷

early 2/92

According to U.S. administration officials, the DPRK ship *Dae Hung Ho* departs the DPRK bound for Syria with an unknown number of *Scud-C* missiles and associated production or assembly equipment such as machine tool "parts." The shipment is worth a reported \$100 million, and is part of an overall missile sale worth \$250 million.¹²⁸

Note: There is considerable fluctuation in reports on the value of this deal. See entries 3/91 and 5/31/91.

2/92

ROK Ambassador to the U.S. Hyun Hong-choo cites the DPRK's extensive missile production as "corroborative evidence" that the DPRK is determined to develop nuclear weapons.¹²⁹

2/92

Anatoliy Rubtsov begins efforts to recruit strategic weapons specialists in Miass for employment abroad, including in the DPRK, offering wages of \$1,500 to \$4,000 per month. The number of Russian specialists eventually involved is at least 60.¹³⁰

(2/92)

According to a U.S. expert, “the North Korean missile development program proceeded in parallel with the nuclear development program,” and “therefore, we assume that a weapon ultimately would be mated with a missile delivery system.”¹³¹

(2/92)

It is reported that the DPRK has configured the *Scud-C* to accurately deliver a chemical warhead.¹³²

(2/16/92)

The German Sunday paper *Welt am Sonntag* reports that the DPRK and Libya are to build a missile test site as part of an effort to jointly develop a new 1,000-km range IRBM based on the *Scud* missile.¹³³

late 2/92

The Iranian freighter *Iran Salam*, which is suspected of carrying DPRK missile-related cargo, is being tracked by U.S. intelligence between Singapore and the Iranian port of Bandar Khomeini.¹³⁴

3/9/92

The DPRK freighter *Dae Hung Ho* docks at the Iranian port of Bandar Abbas with what is believed to be a load of *Scud-C* missiles and missile equipment. The missiles are unloaded and will allegedly be airlifted to Syria. The ship evaded a U.S. naval task force in the Arabian Sea assigned to “dissuade” the ship from delivering its cargo.¹³⁵

3/11/92

The *Dae Hung Ho* departs Bandar Abbas and travels through the Suez Canal to Tartus, Syria where it reportedly delivers manufacturing equipment for underground *Scud* missile factories that the United States says Syria is building in Hama and Aleppo. There are two fuel plants at Hama; one liquid-fuel for *Scud*-type missiles and one solid-fuel for *M-9* type missiles. Other reports indicate that there is a plant near Hama dedicated to guidance systems. The *Dae Hung Ho* cargo off-loaded

at Bandar Abbas, Iran is reportedly destined for the Syrian liquid-fuel plant.¹³⁶

Note: The *Scud-C* missiles allegedly delivered to Bandar Abbas are liquid-fuel missiles.

(3/11/92)

Israeli television reports that a “Korean” ship docks at Bandar Abbas, but has yet to unload its cargo of missiles. It also reports that the “Korean” ship that had docked at Bandar Abbas previously did not carry missiles as had been reported earlier.¹³⁷

Note: The ship docking on 3/11/92 is possibly the *Iran Salam* (see entry late 2/92). The second ship mentioned is probably the *Dae Hung Ho*.

3/13/92

U.S. Assistant Secretary of State Richard Clark states that the DPRK is now the only country selling complete missile systems that exceed MTCR parameters to the Third World. He also states that the DPRK will most likely test its *Nodong-1* missile early this year, and that the DPRK may already be trying to make advance sales in the Middle East.¹³⁸

3/17/92

U.S. Defense Secretary Dick Cheney, referring to the alleged missile delivery by the DPRK ship *Dae Hung Ho*, states, “We have not confirmed that.”¹³⁹

3/27/92

The United States announces the imposition of sanctions on Iran and the DPRK on grounds that the Iranian Ministry of Defense and Armed Forces Logistics and the DPRK firms Lyonggaksan Machineries and Equipment Export Corporation and Changgwang Credit Corporation have been involved in “missile technology proliferation.” The sanctions will last for two years beginning 3/6/92.¹⁴⁰

(5/92)

Meeting with a Carnegie Endowment delegation visiting P’yongyang from 4/28/92 to 5/4/92, DPRK Foreign Minister Kim Yong Nam states, “Other countries have associated themselves with it [the MTCR]—why not us? It would be no problem for our country to associate itself with such a regime because we oppose the proliferation of missiles.”¹⁴¹

(6/92)

According to unnamed military sources in Tokyo, the DPRK conducts an unsuccessful test-firing of the *Nodong-1* missile. The source is quoted by the Japanese daily *Sankei Shimbun*.¹⁴²

6/2/92

Libya denies a report alleging that it is attempting to acquire *Nodong-1*, and intends to establish an indigenous production capability for the missile.¹⁴³

6/16/92

The U.S. Bureau of Export Administration places tighter restrictions on the DPRK's *Nodong-1* and *Scud* development projects under the new Supplement 6 list to the EAR Part 778.¹⁴⁴

(7/92)

The CIA Nonproliferation Center provides information to U.S. policy-makers confirming that the cargo delivered by the DPRK ship *Dae Hung Ho* consisted of missile manufacturing components, which were subsequently transferred to Syria from Tehran by Syrian aircraft. The shipment is allegedly valued at \$100 million. Other information indicates that in exchange for allowing the transshipment, Iran is to be permitted to supply weapons to Hezbollah militia in Lebanon.¹⁴⁵

8/92

Syria conducts two tests of *Scud-C* missiles acquired from the DPRK via Iran. DPRK military personnel are present in Syria for the tests. Israel claims that these tests are the last tests before the missile becomes operational.¹⁴⁶

8/92

Ten of the group of Russian strategic weapons specialists recruited by Anatoliy Rubtsov to work in the DPRK travel there to ensure the veracity of the employment offer.¹⁴⁷

10/92

Ten Russian nuclear physicists are prevented from traveling to the DPRK.¹⁴⁸

Note: There are two groups of experts attempting to travel to the DPRK, one composed of missile specialists and the other of nuclear specialists.

10/92

An Israeli official visits P'yongyang where he is given

assurances that, in exchange for economic assistance, the DPRK will not sell missiles.¹⁴⁹

Note: The source may be misreporting the date of Israeli Foreign Ministry Deputy Director-General Bentsur's secret visit to P'yongyang (see entry 11/92).

10/15/92

A group of 32 Russian engineers, planning to fly to the DPRK to assist in the modernization of ballistic missiles, is intercepted by Russian police at Moscow International Sheremetyevo-2 Airport. Most of the engineers were from the Makeyev Design Bureau in Miass, which is responsible for SLBMs and *Scud* tactical ballistic missiles. The recruiting agent was Anatoliy Rubtsov, a Russian posing as a government official, who was actually in the employ of the DPRK.¹⁵⁰

late 10/92

A DPRK ship laden with up to 100 *Scud-C* missiles departs the DPRK bound for the Iranian port of Bandar Abbas; half of the delivery is to be transported overland to Syria, the other half is to go to the IRGC.¹⁵¹

early 11/92

Israeli Foreign Ministry Deputy Director-General Eitan Bentsur reportedly meets in secret with DPRK officials in P'yongyang to protest DPRK *Scud-C* missile sales to Syria.¹⁵²

11/5/92

A second group of Russian missile technicians is stopped from flying to the DPRK. This group brings the total number of missile technicians detained to 64.¹⁵³

12/8/92

Thirty-six former Soviet nuclear physicists are stopped at Khabarovsk airport while attempting to travel to the DPRK.¹⁵⁴

Note: The point of departure of the nuclear specialists has been given as both Khabarovsk and Moscow. However, there are reportedly no scheduled flights to the DPRK from Khabarovsk.

late 1992

The IRGC naval wing is attempting to extend the range of the *Silkworm* missile to 400 km at a *Silkworm* assembly facility near Bandar Abbas.¹⁵⁵

Note: See entries 11/93 and 5/31/94 for information related to cruise missile developments in Iran, Syria, and the DPRK.

1993

(early 1993)

The BND reports that the DPRK commissioned three international shipping companies to transport “special metals” acquired on Berlin’s grey market for the production of missile “launch pads.”¹⁵⁶

early 1993

Iran takes delivery of an unspecified number of *Scud-C* missiles and launchers as part of a deal with the DPRK.¹⁵⁷

Note: The delivery in question may have been from the ship reported in late 10/92.

(1993)

A Russian Federation Foreign Intelligence Service report on the proliferation of weapons of mass destruction states that the DPRK is seeking specialists from overseas “in order to convert missile manufacturing into a competitive export sector.” The DPRK is using Egyptian technology to upgrade its *Scud* missiles for export to the Middle East.¹⁵⁸

Note: Egypt has a variety of technologies that might interest the DPRK, including carbon-carbon, advanced gyroscopes, and solid-fuel. This may also refer to a leakage of U.K. technology obtained in the BAe/AOI joint development project (see entry late 6/91).

1/93

The group of scientists, detained in 10/92 while trying to go to the DPRK, is returned to Miass after being held for two months at a rest house near Moscow.¹⁵⁹

1/93

The DPRK gives assurances to Russian Deputy Foreign Minister Georgy Kunadze that it will not employ Russian missile and nuclear scientists and engineers. The DPRK decision follows threats by Mr. Kunadze to suspend diplomatic relations if demands not to employ Russian technicians were not met.¹⁶⁰

1/12/93

IRGC Commander Mohsen Rezai travels to P’yongyang from Beijing to finalize new agreements regarding weapon systems including ballistic missiles. Shortly before Rezai’s departure from Iran, a member of the Iranian parliament reveals that the DPRK has demanded a cash payment of \$2.4 to \$2.7 billion for the 200 to

300 *Scud-B* missiles delivered to Iran during the Iran-Iraq War.¹⁶¹

Note: The number of missiles mentioned may be excessive given DPRK production capabilities and the level of Iranian *Scud-B* use during the two “Wars of the Cities.” During that stage of the Iran-Iraq War, Iran fired approximately 91 *Scud-B* missiles. Also, it is unlikely that the DPRK would demand a cash payment given the financial arrangements already in place with Iran (see entries for 12/7/86 and 11/29/90).

2/93

CIA Director James Woolsey, in testimony before the Senate Governmental Affairs Committee, states, “North Korea apparently has no threshold governing its sales [of missiles]; it is willing to sell to any country with the cash to pay.”¹⁶²

2/93

Russian Deputy Foreign Minister Georgy Kunadze visits the DPRK in connection with the Russian demand that the DPRK cease attempts to recruit Russian nuclear and missile engineers.¹⁶³

2/24/93

Yuriy Bessarabov, a leading expert from the Russian firm Unique Defense Enterprise, says that low wages were responsible for the attempt by 60 scientists from the machine design bureau in Miass, Chelyabinsk region to fly to the DPRK to train personnel for strategic arms development programs. Most of the scientists were strategic missile experts, which may indicate that the DPRK is seeking assistance in designing a warhead and delivery system for a nuclear device. Larry Nicksch, a Congressional Research Service Asian specialist, says that it is possible that the DPRK has developed a nuclear bomb but does not yet have a warhead.¹⁶⁴

3/12/93

The DPRK announces its withdrawal from the NPT because of IAEA efforts to conduct a special inspection of DPRK nuclear facilities. According to the NPT, a nation’s withdrawal becomes effective three months after it is announced.¹⁶⁵

3/28/93

A 21-member Iranian delegation, headed by the IRGC commander in charge of the Iranian SSM force Brig. Gen. Hossein Mantequei and including officials from the Iranian Defense Industries Organization and the

missile division of the IRGC, visits P'yongyang in the fifth such visit in the past year. The delegation is to observe the final tests of the *Nodong-1* missile and be trained in its use. According to the People's Mujahedeen of Iran, some of the delegation will stay in the DPRK for at least one month. The delegation's presence indicates that a final deal, which may include the purchase of fixed and mobile launchers, could be imminent. The delegation may also have established a timetable for the testing of *Nodong-2* in Iran. U.S. officials believe that Iranian oil may be exchanged for the missiles; Iran supplies approximately 40 percent of the DPRK's oil needs.¹⁶⁶

Note: Iran has used its oil assets to barter in the past, most notably with Israel and Ukraine. The *Nodong-2* missile referred to may be the 1,300-km range *Nodong* requested by Iran (see entry 7/14/93).

late 3/93

The DPRK completes development of the *Nodong-1* missile.¹⁶⁷

early 4/93

Foreign diplomats in Beijing claim that the DPRK is nearing final testing of a 1,000-km range [*Nodong-1*] missile.¹⁶⁸

4/3/93

The DPRK denies reports that it is exporting to the Middle East missiles capable of delivering nuclear warheads, and dismisses the reports as a U.S. propaganda plot.¹⁶⁹

4/6/93

PRC Foreign Ministry spokesman Wu Jianmin states that U.S. threats of instigating U.N. economic sanctions against the DPRK for missile proliferation will only serve to complicate the situation.¹⁷⁰

4/7/93

A U.S. official suggests that the 3/93 Iranian delegation to the DPRK may have explored the possibility of assembling the *Nodong-1* in Iran from components produced in the DPRK in order to more easily conceal the delivery of the missiles. Officials say that Iran hopes to acquire up to 150 *Nodong-1* missiles.¹⁷¹

4/18/93

The DPRK denies allegations by Western intelligence that the DPRK and Iran are engaged in a cooperative

effort to develop a ballistic missile system capable of striking Japan with nuclear and chemical warheads. Iran is reportedly providing the DPRK with \$500 million for missile development in exchange for an unknown number of nuclear bombs and plans for nuclear weapons reprocessing plants.¹⁷²

Note: While the DPRK may be able to offer some assistance in the area of nuclear weapon development, it is doubtful that it is in a position to provide any working models.

late 4/93

According to some analysts [unnamed], Syrian production of DPRK *Scud-C* missiles at Aleppo and Hama begins.¹⁷³

5/29-5/30/93

The DPRK successfully launches four missiles from Taep'o-dong in Hwadae-gun, North Hamgyong Province, two of which are thought to be *Nodong-1* missiles. The missiles were reportedly fired in the direction of the Japanese Noto Peninsula at target buoys in the Sea of Japan. One missile traveled 500 km, one traveled 100 km and the remaining two fell short of 100 km. Two DPRK naval vessels, a *Najin*-class frigate and a minesweeper, are positioned 30 km apart about 350 km off Noto, reportedly to monitor the launch. Israel's Mossad reportedly warned the United States and Japan of the test weeks in advance.¹⁷⁴

6/93

IRGC commander General Mohsen Rezai holds talks with DPRK defense chiefs in P'yongyang, and urges closer ties between the two nations.¹⁷⁵

Note: This visit may be the same as the visit mentioned in entry 6/16/93.

6/11/93

The DPRK announces the suspension of its decision to withdraw from the NPT.¹⁷⁶

Note: According to the DPRK, this decision does not return the DPRK to IAEA safeguards. The DPRK characterizes its position as somewhere between full-member and non-member status. However, the IAEA considers the DPRK subject to full safeguards.

6/11/93

The DPRK denies sending any invitation to Israeli Foreign Minister Shimon Peres in 12/92, and also denies ever having sold weapons or missiles to Arab nations in the Middle East.¹⁷⁷

6/14/93

Israeli Foreign Minister Shimon Peres expresses his desire to visit the DPRK in order to convince them not to sell missiles to Iran.¹⁷⁸

6/16/93

In P'yongyang, the DPRK and Iran sign a 1993-94 plan for scientific, technological, educational, and cultural exchange.¹⁷⁹

(6/17/93)

Al-Sharq Al-Awsat, a Saudi paper based in London, reports that there is a tripartite deal between Iraq, Iran, and the DPRK in which Iran will tranship Iraqi oil to the DPRK through the Iranian port of Bandar Abbas. The deal is worth \$120 million, and its proceeds are to be divided equally between Iran and Iraq. The Iranian portion will be transferred to the DPRK bank, Changgwang, and is to finance the purchase of "long-range" missiles from the DPRK. The Iran-DPRK negotiations are being handled by Iranian Deputy Defense Minister Ahmad Wahedi with the assistance of the head of the Defense Ministry's Missile Department Montaqi and the IRGC representative in P'yongyang Tabaqi. Negotiations between Iraq and Iran are being conducted by the Iranian Foreign Ministry advisor.¹⁸⁰

Note: The DPRK bank, Changgwang, is the same entity that is currently under U.S. sanctions for "missile technology proliferation" (see entry 3/27/92).

6/25/93

In Beijing, Israeli Foreign Ministry Deputy Director Eitan Bentsur meets with DPRK officials in an attempt to dissuade them from concluding a reported deal to provide Iran with 150 *Nodong-1* missiles in exchange for oil and cash. The meeting reportedly ends with the DPRK officials demanding cash for compliance.¹⁸¹

Note: There are additional reports that place Bentsur in P'yongyang at about this time performing the same mission. It is uncertain whether this visit was complementary to or confused with the Beijing visit.

6/27/93

The Israeli Foreign Ministry Director-General meets with a ranking official of the Communist Party of the DPRK to discuss Israeli concerns about the possible sale of missiles to Iran that could reach Israel.¹⁸²

Note: The Israeli is probably Deputy Director-General Eitan Bentsur.

7/93

CIA Director James Woolsey, in testimony before Congress, states that the *Nodong-1* missile, which could be fitted with NBC as well as HE warheads, had been tested, and that "of greatest concern is North Korea's continued efforts to sell the missile abroad—particularly to dangerous and potentially hostile countries such as Iran." Director Woolsey further states that "with this missile, North Korea could reach Japan; Iran could reach Israel; and Libya could reach U.S. bases and allied capitals in the Mediterranean Region."¹⁸³

7/3/93

The DPRK ambassador to the PRC tells reporters that if it were true that the DPRK tested a missile [on 5/29/93], then it was a normal event as countries often need to conduct military exercises.¹⁸⁴

(7/14/93)

According to the Japanese daily, *Sankei Shimbun*, the Iranian delegation of 4/93 was to sign a contract for the purchase of 150 *Nodong-1* missiles, which reportedly have a CEP of 2,000 meters. The missile was originally designed with a range of 1,000 km, but, at Iranian request, this was increased to 1,300 km so that the missile could reach Israel.¹⁸⁵

8/2/93

U.S. Undersecretary of Defense for Policy Frank Wisner and his Japanese counterpart, Administrative Vice-Defense Minister Shigeru Hatakeyama, agree to form a joint committee to monitor DPRK development of the *Nodong-1* missile. The committee will comprise officials from the BMDO and the JDA's Policy Bureau.¹⁸⁶

8/4/93

Two Russian civilian Condor transport aircraft and crews, leased by the Syrians, depart with seven *MAZ 543* "chassis" from Sunan airfield in the DPRK, landing in Damascus, Syria on 8/5/93. According to U.S. intelligence sources, the *MAZ 543s* are probably taken from Damascus to a missile plant in Nasariya for use as mobile missile launchers.¹⁸⁷

Note: There are unconfirmed reports that the two aircraft carried spare parts for *Scud* missiles. The *MAZ 543s* were not complete mobile missile launchers, and may have been delivered to Nasariya for the attachment of the erector unit.

8/8/93

Israeli Prime Minister Yitzhak Rabin says that Syria has received *Scud-C* missiles from the DPRK via Russian aircraft, and that Iran may also have received *Scud-Cs* in this fashion.¹⁸⁸

Note: It is unclear whether Rabin is referring to the 8/5/93 delivery of *MAZ 543* TELs to Syria or if there has been another delivery since.

8/11/93

DPRK Army first lieutenant Yim Yong-son defects to the ROK. He discloses that the DPRK is currently constructing two additional underground long-range missile launch bases, one at Chunggang, Chagang Province and the other at Wonsan, Kangwon Province. Yim states that missiles launched from these bases will be able to strike U.S. military facilities in Japan and Guam.¹⁸⁹

Note: See late 1980s entry for information on the establishment of the initial two bases. Note also that on some maps of the DPRK the province of Chagang is combined with North P'yongyang Province.

8/16/93

At the behest of the United States, Israeli Prime Minister Yitzhak Rabin announces that Israel will break off discussions with the DPRK designed to halt the sale of DPRK missiles to the Middle East.¹⁹⁰

9/14/93

U.S. Army General (ret.) Robert W. RisCassi [former Commander U.S. Forces Korea], commenting on the 5/29/93 test-launch of the *Nodong-1* missile, states, "There was no telemetry with the shots, which was strange, in that there was no close-down of the sea and air space in that direction, which is odd when you are making a missile that you've not tested before and are firing at any extended ranges." Because of this, RisCassi suspects that the test was a demonstration for Middle East buyers, rather than a serious technical evaluation.¹⁹¹

Note: While the test may have been part of a sales pitch, given the number of missiles available to the DPRK and the cost of those systems, it is not likely that it would fire a missile off just for show. Although there was no intercepted telemetry, the Chinese have been known to use on-board data recording and recovery packages in missile testing. Furthermore, the flight path was lined with DPRK naval vessels, and the flight took place within range of coastal monitoring stations, either of which could provide valuable data.

9/17/93

JDA Director-General Keisuke Nakanishi and ROK Air Force Chief of Staff General Cho Kun-hae agree on the need to promote cooperation between their countries in conjunction with the United States against suspected DPRK long-range missile and nuclear developments.¹⁹²

9/20/93

Responding to questions regarding the use of Russian aircraft to transport DPRK missiles to Iran, Russian Deputy Foreign Minister Anatoliy Adamishin states, "To my knowledge there were no ballistic missiles . . . You can not check them all, but to my knowledge there were no military equipment [sic] in these flights."¹⁹³

Note: See entry 8/8/93 for Rabin's statement regarding the air delivery of missiles.

9/20/93

A Russian government official states that a Russian intelligence official recently informed the government of the ROK that the Russian government is keeping watch over 3,500 nuclear physicists to prevent the transfer of nuclear technology abroad.¹⁹⁴

9/24/93

The DPRK Foreign Ministry formally confirms the missile test-firing [on 5/29/93], stating that Japan was fomenting anti-DPRK sentiment in reference to the "normal missile drill."¹⁹⁵

10/93

Japanese Foreign Minister Tsutomu Hata meets with Iranian Foreign Minister Ali Akbar Velayati in New York. Although Velayati denies any Iranian involvement in the DPRK missile program, Hata claims that the Iranian presence at the 5/93 DPRK missile test indicates that they were involved. Hata warns Velayati that Iran will find itself isolated if it persists in this relationship with the DPRK.¹⁹⁶

10/93

The Japanese Defense Ministry begins a secret study of the feasibility of developing five to seven military reconnaissance satellites to give the Japanese Self-Defense Forces the ability to track DPRK activity, such as ballistic missile launches, 24 hours a day. The study is in response to the 5/93 DPRK launch of a *Nodong-1* missile that impacted in the Sea of Japan off the Noto Peninsula.¹⁹⁷

10/93

The DPRK reportedly receives its first submarine from Russia. Nine more are delivered by 1/94.¹⁹⁸

Note: It is unlikely that this is the correct delivery date as the contract is not signed until 11/16-11/19/93 (see that entry).

10/22/93

Al-Sharq Al-Awsat reports that the *Nodong-2* is to be tested in the Lut Desert in southeast Iran in late 10/93 or early 11/93.¹⁹⁹

10/22/93

A 36-page top secret memorandum by the Center for Military Strategic Analysis at the Russian General Staff titled, "The Russian Federation Military Policy in the Asia Pacific Region Under the New Military Political Conditions," states that 160 Russian "scholars" have assisted the DPRK missile and nuclear programs since the mid-1980s. The memorandum clearly states that Russia was assisting the DPRK's nuclear missile program in the late 1980s. The contents of the memorandum are disclosed by the Japanese weekly *Shukan Bunshun* in 1/94.²⁰⁰

Note: While the authenticity of the report has been denied, this seems to corroborate the 2/6/89 report alleging USSR-DPRK missile and warhead developmental assistance (see entries 2/6/89, 1/94, and 1/28/94).

10/28/93

The DPRK denies claims made in the Western press that it intends to test a ballistic missile in Iran, stating, "It is inconceivable that the DPRK, making consistent efforts for world peace and security, intends to conduct a missile launching test in a far off foreign country." The Islamic News Agency in Iran also denies these claims.²⁰¹

11/93

The scheduled test of a *Nodong* missile in Iran is postponed.²⁰²

11/93

A Japanese Defense Ministry official states that the DPRK is nearing completion of the *Nodong* missile.²⁰³

11/93

It is reported that Syria and Iran are jointly developing a cruise missile with PRC and DPRK technology as well as technology from Germany and other European

nations. The development of the missile is centered on Iranian Ministry of Heavy Industries plants.²⁰⁴

11/12/93

A spokesman for the JDA's intelligence department states, "We cannot accurately say when and where the missiles [*Nodong-1*] would be deployed, but is true that they [DPRK] are very close to completing development of this missile." He also states that the DPRK has not developed an advanced solid-fuel missile. He is unable to confirm whether the DPRK has begun development of the longer range *Nodong-2* missile.²⁰⁵

11/12/93

The ROK's KBS-1 Radio cites the Russian newspaper *Izvestiya* as having reported that the DPRK has provided Iran with the technology to manufacture *Nodong-1* missiles in exchange for Western technology and equipment.²⁰⁶

11/13/93

Iran denies claims, made in the *Times* of London on 11/12/93, that it is financing the production of a *Scud* variant by the DPRK. Iran also denies allegations that it is jointly producing an advanced cruise missile with Syria.²⁰⁷

11/15/93

First Deputy Security Minister Sergey Stepashin announces the uncovering of a large-scale DPRK Special Services operation intended to recruit a large number of Russian missile and space specialists for work in the DPRK. The organizer of the operation, Major General Nam Gae-wok, a counselor at the DPRK embassy in Moscow, was expelled from Russia. Alexei Kandaudov, a Russian Security Ministry official, cites this as "the first case when a foreign diplomat has been asked to leave the country for an attempted recruitment of Russian scientists."²⁰⁸

11/16-11/19/93

The Management Bureau of the Resources External Affairs of the Russian Defense Ministry and the Japanese firm, Toen Shioji, sign a contract for the delivery of twelve submarines to the DPRK for \$1.15 million. The submarines are to be used for scrap. A high-ranking DPRK naval officer is involved in the sale, which reportedly includes fully functional *Golf II*-class submarines.²⁰⁹

Note: Russia has only twelve *Golf II*-class submarines in its inventory.

12/93

Russia delivers the first of 12 decommissioned submarines purchased by the DPRK.²¹⁰

Note: There are conflicting reports as to the date of the first delivery and the total number of submarines involved in the deal (see entry 10/93). The submarine may be a *Golf*-class SSB.

12/93

As part of the sixth high-level delegation to the DPRK in 15 months, Iranian Defense Minister Mohammad Fourouzdeh visits the DPRK to discuss technological cooperation.²¹¹

Note: The fifth visit referred to in entry 3/28/93 may refer to missile-related delegations rather than “high-level” delegations.

12/93

Middle Eastern intelligence sources claim that Iran is expected to take delivery of DPRK *Nodong* IRBMs “within months.” A full test of the missile is expected to take place under DPRK supervision in the southern Iranian desert by early 1994.²¹²

12/93

The DPRK Deputy Permanent Representative to the U.N. Ho Jong says that the DPRK never had any intention of selling missiles to Iran, stating, “There is no sale. It is entirely false.”²¹³

12/1/93

A Japanese Foreign Ministry official states that Japan has made repeated overtures to Iran not to assist the DPRK in the testing of the *Nodong* missile. He suggests that economic aid to Iran could be suspended if such a tests occurs.²¹⁴

12/1/93

The Japanese daily *Tokyo Shimbun* cites a Japanese government source as stating that Iran and the DPRK have a bilateral agreement that calls for the mid-12/93 test-firing of a missile in Iran.²¹⁵

12/2/93

A high-ranking ROK intelligence official confirms that the DPRK conducted its first successful test-launch of the *Nodong-1* missile from a mobile launcher in late 5/93 [5/29/93], striking a target 500 km distant.²¹⁶

12/2/93

IRNA, citing an “informed political source,” states, “The Iranian source reiterated that Tehran and P’yongyang have signed no contract either on testing or purchase of long-range missiles.”²¹⁷

12/15/93

The director of the Modern Korea Institute Katsumi Sato states that Chongnyun, the 150,000 member pro-DPRK general association of Korean residents in Japan, has exported “key high-tech components North Korea needs for its war machine,” and adds that Institute analysis shows that the DPRK is “now trying to down-size a missile warhead, so that the *Nodong-1* missile could deliver a nuclear bomb to Japan.” Tsutomu Nishioka, editor of the Institute’s monthly news magazine, notes that 16 billion yen are sent to the DPRK annually in remittances, dwarfing the DPRK budget of 35 billion won, and that “although a ban on cash gifts to North Korean relatives may raise humanitarian problems, to prevent North Korea from developing a nuclear missile should take precedence, as a nuclear attack would snuff out so many people.”²¹⁸

12/20/93

A statement by Israeli Air Force Intelligence Chief Colonel “A” is published which says, “Iran will have [North] Korean *Nodong* missiles in a year which could be deployed in the west of the country and reach Israel.” Colonel “A” further states, “There is no doubt that Iran is trying to obtain the capacity to produce chemical and nuclear warheads,” which could be delivered by the *Nodong*.²¹⁹

12/24/93

A senior JDA spokesman is quoted as saying that “when North Korea succeeded in test-firing the *Nodong-1* in late March it was launched from a fixed platform, so we thought that changing the location was very difficult, but later the United States and Japan learned that a mobile launch was possible by analyzing intelligence.” He adds that the mobility of the *Nodong-1*, and the fact that the DPRK has relocated most of its military facilities underground, make detection and destruction of the missiles extremely difficult. The official also states that the *Nodong-1* is too large to be launched from a ship. According to international military sources, “North Korea will put the *Nodong-1* missile into operational deployment next year [1995].”²²⁰

Note: The *Nodong* test mentioned by the JDA spokesman took place on 5/29 and 5/30/93, not in 3/93.

12/25/93

Officials in Washington say that the DPRK has delayed plans to sell Iran the *Nodong-1* missile. The reason for the delay is unclear, but officials have a number of theories, among them diplomatic maneuvering linked to nuclear inspections, production problems, or final arrangement problems with Iran.²²¹

12/26/93

Pakistani Prime Minister Benazir Bhutto denies international media reports that she will be discussing missile procurement or development during her two-day visit to the DPRK, which is to begin on 12/29/93. The DPRK visit, which immediately follows a meeting in Beijing, is at the invitation of DPRK President Kim Il-sung.²²²

late 1993

A Russian reconnaissance satellite with a KFA-1000 camera photographs the Taep'o-dong Missile Test Complex in North Hamgyong Province. A civilian satellite imagery analyst identifies a flame duct for static engine testing, a large static test stand, burn marks indicating tests from mobile launchers, accompanying support facilities, and a *Najin*-class frigate at a nearby port.²²³

Note: This report corroborates Japanese and U.S. intelligence analyses concluding that the 5/94 test-launch was conducted from mobile launchers (see 12/24/93 entry).

1994

(1/94)

The Japanese daily *Shukan Bunshun*, citing a Russian "General Staff Secret Report," states that there are presently 17 "highly qualified" missile specialists and nine nuclear scientists working in the DPRK. Among the Russian specialists in the DPRK is Anatoliy Rubtsov, who is now a member of the DPRK's Science Academy. Some of the Russian specialists are reportedly changing their names and taking DPRK citizenship. According to the report, the DPRK is developing a solid-fuel *Nodong-2*, and will soon attempt to acquire Russian solid-fuel technology and expertise.²²⁴

(1/94)

CIA director [James Woolsey] states that the DPRK would probably resort to its MiG-23 aircraft as a nuclear weapon delivery system, rather than the *Nodong-1* missile.²²⁵

1/4/94

The Israeli daily *Ha'aretz* reports that the DPRK has indefinitely postponed the sale of *Nodong* IRBMs to Iran.²²⁶

Note: The postponement may be the result of diplomatic pressure from the international community (and Japan in particular) resulting from the DPRK-IAEA dispute (see entries 10/93, 11/93, and 12/1/93).

(1/12/94)

The DPRK government news agency, KCNA, reports that Commander Cho Myong-rok is leading a delegation on a visit to Iran.²²⁷

Note: See entry 2/94 for information on the purpose of the visit.

1/14/94

U.S. President Clinton, commenting on the retargeting of U.S. and Russian missiles at the oceans, states, "If we had to target a missile, God forbid, at North Korea or any place else, we could do it very quickly."²²⁸

1/14/94

Japanese police raid Anritsu Corp., Yokohama Machinery Trading Co., and one other Japanese company on suspicion of having sold spectrum analyzers to the DPRK via the PRC in 1989. The spectrum analyzers could be used to improve the precision of missile targeting and the accuracy of the *Nodong-1*. KCNA denies allegations that the DPRK had imported spectrum analyzers from Japan, stating, "[T]he so-called export of a spectrum analyzer is an utterly groundless fabrication against the DPRK." KCNA adds that it was impossible that spectrum analyzers were imported via a third country, and "preposterous" that it might be used in the development of a ballistic missile.²²⁹

1/16/94

The Japanese newspaper *Tokyo Shimbun* cites a Russian Pacific Fleet senior officer as saying that Russia has contracted with the DPRK for the sale of 10 *Golf II*-class submarines.²³⁰

1/17/94

The Russian Defense Ministry denies the *Tokyo Shimbun* report regarding the *Golf II*-class submarine sale to the DPRK, and refuses to comment on the type of submarines involved or conditions of the contract. However, the Russian Foreign Ministry acknowledges the deal to ROK embassy officials in Moscow with the assurance that the submarines are being sold for scrap only.²³¹

1/18/94

Western defense analysts in Moscow say that Russia is selling 10 ballistic missile-capable *Golf II*-class submarines to the DPRK. The analysts maintain that the DPRK could install **modified** *Nodong-1* missiles on the submarines. Although the Russian Navy insists that the submarines will be dismantled under Russian military observation, the Western analysts believe that the DPRK may cannibalize the submarines for parts and that knowledge of these submarines will help the DPRK to improve its own submarine technology.²³²

Note: The concern that the DPRK might use the submarines as a launch platform for its ballistic missiles is not as far-fetched as it may at first appear. The first Soviet SLBM, the *SS-N-4 Sark*, was a *Scud* derivative, and was originally deployed on *Golf*-class submarines. A *Scud-C* may be adaptable to an SLBM role, but, at 15.5 meters in length, the *Nodong-1* is one meter longer than the *SS-N-4* and would not fit in a *Golf* launch tube without modification. The modification referred to may be a shortening of the missile, which would also shorten the range of the missile. It is not unreasonable to assume that the DPRK may have had access to SLBM technology as the precursor to the *SS-N-4*, the *R-11FM*, was transferred to the PRC in 12/59. The PRC still uses the *Golf*-class submarine as an SLBM training and test platform. Additionally, it should be noted that the Russian scientists recruited in late 1992 were from the Makeyev Design Bureau, which is responsible for the design of all modern Russian SLBMs.

(1/28/94)

The ROK daily *Hanguk Ilbo* reports that the DPRK possesses 12 to 18 *Nodong-1* missiles, and is developing the *Nodong-2*.²³³

Note: The number of missiles reported indicates that the DPRK has a *Nodong-1* regiment/brigade.

1/28/94

Colonel General Mikhail Kolesnikov, Chief of the Russian General Staff, denies allegations made in 1/94 by the Japanese weekly *Shukan Bunshun* regarding an alleged top secret Russian report. He says that the report's alleged issuing authority, the Center for Military Strategic Analysis at the Russian General Staff, does not exist, although the General Staff does have a "center for military strategic studies." Kolesnikov lists further discrepancies within the report, including the form used, the index number cited, the incorrect placement and terminology of the security classification, and, finally, the use of a serial number originating with the USSR

Council of Ministers (a numbering system not used since 1991) rather than one used by the Ministry of Defense.²³⁴

2/94

DPRK Air Force Commander General Cho Myong-rok, heading a 29-member delegation of military and nuclear experts, returns from Iran, where, according to the Paris-based *Al-Watan Al-Arabi*, "new agreements to intensify military and nuclear cooperation" were reached. Western and Arab diplomatic sources believe that the testing of the *Nodong-2* in Iran was also discussed, and that the delegation visited the Iranian missile test site at Sharoud.²³⁵

Note: There are conflicting reports as to whether it is *Nodong-1* or *Nodong-2* that is to be tested. The choice of Cho Myong-rok as the head of the delegation may be significant in that it supports conjecture that DPRK missiles fall under Air Force command and control (see "Command and Control" in the Introduction to this chronology).

2/94

U.S. intelligence satellites detect a new "missile simulator" [hardware mock-up] at Sanum Dong R & D facility, P'yongyang. The mock-up has been designated *Taep'o-dong-2*, and appears to be a two stage missile with the first stage resembling the Chinese *CSS-2*. The dimensions of *Taep'o-dong-2* indicate that its range could be as great as 3,500 km. Also spotted was a second two-stage missile that has been designated *Taep'o-dong-1*, which is believed to have a *Nodong-1* first stage and a *Scud-B* or *-C* second stage. ROK and U.S. intelligence officials believe that, considering the missile's potential range, *Taep'o-dong-1* may be *Nodong-2*. The majority view among analysts at the DIA and CIA is that the missiles have been developed indigenously; a minority within the DIA contends that the PRC may have assisted. The two missiles are named after the location of their development in the DPRK.²³⁶

2/94

The DPRK conducts a static test of a liquid-fuel engine at Taep'o-dong, the location of the DPRK's largest missile engine test facility.²³⁷

(2/3/94)

The Japanese daily, *Tokyo Shimbun*, reports that Russia, under pressure from the international community, has halted the delivery of decommissioned Russian submarines to the DPRK.²³⁸

2/14/94

Vladimir Kumachev, a senior official of Russia's Institute of National Security and Strategy, states that "according to information that we have received, North Korea has nuclear warheads." Kumachev adds, "We know they have carried out tests in certain African countries under totalitarian regimes." He maintains that Russia still has approximately 15 experts in the DPRK working in the civil nuclear industry. According to Kumachev, in the late 1970s, the Soviet Union sent 10 conventional missiles to the DPRK, and that additional shipments were sent via third parties such as Iraq.²³⁹

(2/24/94)

IRGC commander General Mohsen Rezaei denies that Iran would ever allow the DPRK to test missiles on Iranian territory. He states, "We are very sensitive to having our soil and military facilities used by foreigners. Iran will never opt for such cooperation no matter how friendly the countries are."²⁴⁰

early 3/94

Israeli diplomats meet with senior DPRK representatives in Beijing to conduct secret talks aimed at halting the export of DPRK *Nodong* missiles to Iran. The talks are being held against the wishes of the United States, which is engaged in its own diplomatic efforts to halt the sale.²⁴¹

Note: See entry 8/16/93 for information on U.S.-Israeli relations with regard to the DPRK.

3/94

Pentagon spokeswoman Kathleen de Laski, commenting on reports of DPRK development of the *Taep'o-dong-1* and *-2* two-stage missiles, states, "We have been aware that North Korea has been developing a follow-on missile to its *Scud* program," but it is "too early to speculate on when or if it could become operational." She refers to *Taep'o-dong* as "a weapon of the future."²⁴²

3/94

Henry Sokolski, a nonproliferation specialist and former Bush administration Pentagon official, states, "A staged missile is a more ambitious proposition than anything North Korea has attempted so far." He outlines some of the difficulties inherent in missile staging, including engines with greater thrust to weight ratios, high speed turbo pumps to feed clustered engines, sequencing sys-

tem for stage separation, staging mechanism, airframe design, an advanced digital guidance system, and a re-entry vehicle.²⁴³

3/94

Russia expels five DPRK nationals from Moscow for "showing too much interest in nuclear components."²⁴⁴

3/9/94

U.S. officials confirm that the DPRK is building two new medium-range missiles: *Taep'o-dong-1* (1,000+ mile range) and *Taep'o-dong-2* (2,000+ mile range).²⁴⁵

3/17/94

CIA Director R. James Woolsey confirms the existence of the DPRK's *Taep'o-dong-1* and *Taep'o-dong-2* IRBMs in a speech given at a CIA conference discussing the origins of the agency. Mr. Woolsey comments, "These new missiles have yet to be flown, and we will monitor their development, including any attempts to export them in the future to countries such as Iran." He remarks that these missiles could threaten major portions of East Asia and the Western Pacific, "and if exported to the Middle East, could threaten Europe as well."²⁴⁶

3/17/94

A PRC foreign ministry spokesman states, "The report of the *Wall Street Journal* that China had possibly provided advanced missile technology to the Democratic People's Republic of Korea is totally groundless."²⁴⁷

Note: The 3/15/94 issue of the *Wall Street Journal* cited in the Chinese denial does not contain the indicated report.

3/21/94

According to Pentagon officials, a deployment order is signed directing the movement of up to six *Patriot* missile batteries from Ft. Bliss, Texas to the ROK as a defense against DPRK ballistic missiles. The missiles are to be moved by sea from a U.S. west coast port.²⁴⁸

3/22/94

An Israeli Foreign Ministry spokesman denies reports that Israel is engaged in secret talks with the DPRK concerning missile sales to Iran.²⁴⁹

3/24/94

U.S. Senate Armed Services Committee Chairman Sam Nunn, commenting on the Clinton administration's threat to withhold MFN status from the PRC, states, "Our top

priority in dealing with China must be the situation on the Korean Peninsula.”²⁵⁰

3/24/94

The DPRK daily *Minju Joson* denounces the U.S. decision to deploy *Patriot* missiles in the ROK and the resumption of joint military exercises as being “virtually a declaration of total confrontation and declaration of war against the North.”²⁵¹

3/28/94

The DPRK Foreign Ministry states, “It is known to everyone that its [the *Patriot* missile’s] target can be changed by the kind of warhead it is tipped with.” The DPRK claims that the *Patriot* missile can be modified to be an offensive weapon.²⁵²

Note: While the *Patriot* missile could be modified to fill a surface-to-surface role as is implied, its low payload and high cost would make it a poor choice.

3/30/94

One *Patriot* missile battalion is loaded onto the reserve ships *SS Comet* and *SS Meteor* at Oakland Army Base, California. The battalion, consisting of three to six batteries of eight launchers each, is bound for the ROK. The spokesman for the U.S. Transportation Command, Commander Steve Honda, comments that the *Patriots* could have been transported by air, but that “there isn’t a sense of urgency.”²⁵³

Note: The United States has only 78 *Patriot* launchers in its inventory. If six batteries are sent to the ROK, that would mean that fully two-thirds of all U.S. *Patriot* launchers are en route.

3/30/94

The Russian Federal Counterintelligence Service (FSK) detains three DPRK embassy employees for attempting to acquire samples of new Russian weaponry.²⁵⁴

(3/31/94)

The Russian weekly *Moscow News* reports on an interview with Russian missile experts Yuriy Besarabov and Vladimir Yusachev, both of whom were among the Russian specialists who tried to emigrate to the DPRK to work on the missile program there. Besarabov and Yusachev state that the original contacts to the specialists were made through their places of employment, the Isayev and Makayev design bureaus, and that Russian scientists who are currently in the DPRK may have left Russia with official permission.²⁵⁵

4/94

Kim Il-sung cancels a 5/94 meeting in Beijing with PRC President Jiang Zemin designed to improve relations between the two countries. The cancellation is seen as a sign of the DPRK’s displeasure with the PRC’s lack of support in the U.N. regarding nuclear inspections.²⁵⁶

(4/94)

The Japanese Ministry of Foreign Trade and Industry [MITI] requests that Russia send a special representative to the DPRK to monitor the scrapping of decommissioned Russian submarines. The Japanese government threatens to block the deal, which was arranged by the Japanese trading company Toen Shioji, if the DPRK does not allow Russian monitoring. The 12 Russian submarines in question are reportedly rust-eaten and semi-submerged.²⁵⁷

Note: The Russians stated in 1/94 that the submarines would be dismantled under Russian military observation (see entry 1/18/94).

4/6/94

The DPRK’s ambassador to India Cha Song-ju tells the Yonhap news agency that, “Our nuclear arms, if developed, would be primarily designed to contain Japan.” Cha also says that the DPRK would not target the ROK or mainland United States with any future nuclear missiles, and repeats the DPRK assertion that it will not build such weapons. Japanese military commentator Kensuke Ebata notes, however, that, “The first obvious target for these missiles [*Nodong-I*] are the U.S. bases in Japan. . . . Such an attack would serve two purposes: to take out their primary enemy forces in a preemptive strike and serve a warning to Japan.”²⁵⁸

Note: Ambassador Cha’s statement came the day after the start-up of Japan’s first fast-breeder reactor.

4/7/94

The ROK Cabinet forms a crisis unit to deal with the nuclear threat posed by the DPRK.²⁵⁹

4/7/94

The Japanese daily *Sankei Shimbun*, citing ROK sources, reports that the DPRK has targeted some of its SSMs at the PRC. The ROK sources, who allegedly received the information from PRC intelligence, claim that *Scud-C* missiles launched from several DPRK missile sites could strike industrial centers in the northeast of the PRC.²⁶⁰

4/11/94

Military commentator Paul Beaver, in an interview for a Japanese feature television program entitled "Areas of Dispute in the World," reveals that the DPRK and Iran have agreed to establish a *Nodong-1* missile production facility in Iran under the code name "Ronda-68."²⁶¹

Note: The "Ronda-68" project referred to is probably the Tondar-68 project.

(4/27/94)

The Israeli Home Front Commander Major General Ze'ev Livne states that Syria is continuing to acquire "Scud" missiles and launchers from the DPRK. He further notes that missiles launched from Iran would pose a more difficult operational dilemma for the Home Front Command.²⁶²

4/28/94

KPA Sgt. Lee Chung-guk, who defected to the ROK on 3/18/94, states in a news conference that the DPRK has the technology to mount chemical, but not nuclear, warheads on *Scud* missiles, and further states that "Missile bases located in Myongch'on and Hwadae of North Hamgyong Province have Okinawa and Guam within its [sic] shooting range." Lee also states that missiles based in Chagang Province are targeted at the PRC. Lee served as a "calculator" at the "Counter-nuclear and Atomic Analysis Center" of the Nuclear and Chemical Defense Bureau of the KPA General Staff.²⁶³

Note: See entries late 1980s and 8/11/93 for information on underground missile bases.

early 5/94

U.S. intelligence imaging detects DPRK efforts to conceal the *Taep'o-dong-1* and *-2* mock-ups at the Sanumdong missile R & D facility.²⁶⁴

5/94

A U.S. reconnaissance satellite notes movement of containers to a missile test site on the DPRK east coast. The satellite also detects the installation of a launcher and the erection of a "giant shelter pad against propellant jets," as well as significant DPRK naval activity.²⁶⁵

Note: At this time, the DPRK appears to be preparing for two separate missile tests: a static test-firing of the *Taep'o-dong-2* first stage and a test-launch of *Nodong-1*. The "giant shelter pad" may be an indication of a static test, while the TEL sightings and naval activity are possible signs of a test-launch (see entries 5/21/94 and 6/94).

5/2/94

Forty-eight year old former DPRK security force captain Yo Man-chol, who defected to the ROK in 3/94, states that he had heard of test-firing of multi-stage missiles in North Hamgyong Province.²⁶⁶

5/7/94

According to a *Jane's Defence Weekly* report, U.S. intelligence officials believe that the DPRK's *Taep'o-dong-1* and *Taep'o-dong-2* missiles are too large to be transported by missile launchers available to the DPRK. The DPRK is believed to have two transporters of sufficient size to carry the missiles in sections, but this method of transport would necessitate reassembly and launch of the missile from a fixed launch site.²⁶⁷

Note: This may corroborate the existence of the underground launch bases reported by the DPRK defector in 8/11/93.

5/13/94

An official at the Russian Defense Ministry states that the Ministry has made several requests to the DPRK for a Russian expert to be present at the dismantlement of decommissioned Russian submarines in the DPRK, but the DPRK has not yet assented. Western sources in the ROK say that "as they [the DPRK] reject a Russian experts presence, there is the strong possibility that they may recycle the submarine for military purpose[s]."²⁶⁸

Note: See entries 1/18/94 and (4/94).

5/21/94

According to an unidentified military source in Tokyo cited by the Japanese daily *Yomiuri Shimbun*, a U.S. reconnaissance satellite observes "crane trucks" at a DPRK missile base and monitoring vessels assembling at a port on the Sea of Japan.²⁶⁹

Note: The crane trucks may be for loading missiles onto TELs preparatory to a test-firing. The port mentioned is possibly Ch'ongjin, which is located just south of the missile development sites at Nodong and Taep'o-dong.

(5/23/94)

Former Royal Navy Captain Richard Sharpe, editor of *Jane's Fighting Ships 1994-95*, indicates that the launch tubes on the *Golf*-class submarines purchased by the DPRK from Russia could be adapted for other weapons. The *Golf* submarines were decommissioned by the Russian Navy in 1990.²⁷⁰

Note: The idea that the *Golf* launch tubes could be modified to fire *Nodong* missiles was noted previously by Western defense analysts (see entry 1/18/94).

5/23/94

A ROK Foreign Ministry official states that the Russian submarines purchased by the DPRK have had their weapon systems removed and are so obsolete that they are unusable for offensive purposes. The official indicates that the submarines were purchased for scrap and that of the 12 submarines contracted for, only one has been delivered.²⁷¹

Note: Commenting on the state of the equipment on the submarines, Toen Trading Company executive Ariyoshi Shibata states, "Everything is left as it is. Nothing is removed." This suggests that the weapon systems may not have been removed as stated by the ROK official.

5/28/94

U.S. reconnaissance satellites detect TELs operating near the DPRK coast and ships assuming positions off the coast, both of which may indicate preparation for an upcoming *Nodong-1* test-launch. Another test of the missile would contribute to the validation of the *Nodong-1*'s flight characteristics.²⁷²

(5/28/94)

The Japanese daily *Yomiuri Shimbun*, quoting Japanese military sources with knowledge of DPRK movements acquired from the United States, reports that trucks, launchers, and other vehicles assembling at the site suspected of being readied for an upcoming *Nodong* test-launch. Additionally, naval vessels are reportedly very active in the DPRK's east coast ports, possibly to assist in determining the impact point of a tested missile. The sources indicate that the DPRK may be planning the test to take advantage of the "warm seasonal weather conditions in the East Sea," not out of "any political intention of influencing nuclear negotiations."²⁷³

5/31/94

According to Pentagon officials, the DPRK test-fires a new anti-ship missile, with a reported range of 100 miles, at a barge in the sea of Japan, which it reportedly misses. The missile was modified to extend its range from 60 to 100 miles (96 to 160 km). One Pentagon official states that the DPRK is believed to have been developing the missile over the last 18 months and that it is a low-flying subsonic cruise missile, which appears to be a derivative of Chinese and Russian systems. Officials of the Japanese Defense and Foreign Ministries indicate that the missile is an upgraded *Silkworm* missile probably involved in routine training. Former head of the

Japanese Defense Ministry's Defense Research Institute Makoto Momoi states, "Since the test-firing was conducted in the open sea with proper warnings, I see a clear political motive with these things going on in New York."²⁷⁴

Note: If the range is correct, this was not a standard *Silkworm* missile. However, the range is consistent with that of the PRC's *HY-4*. Additionally, the missile may be related to the Syrian-Iranian joint cruise missile development program, or the Iranian attempt to extend the range of the *Silkworm* (see entries 11/93 and late 1992). The "things going on" are the U.N. Security Council discussions about the DPRK nuclear program.

6/94

Russian President Boris Yeltsin informs ROK President Kim Young-sam that Russia no longer feels bound by the 1961 treaty in which the Soviet Union pledged to defend the DPRK in case of hostilities.²⁷⁵

6/94

Sergei Stepashin, chief of the Russian counterintelligence service, reveals that three DPRK nationals have been detained in Primorskoye territory, which is near the Russia-DPRK border, on suspicion of attempting to acquire nuclear weapons components.²⁷⁶

6/94

A U.S. government official states, "The North Koreans have a reputation for exporting every weapon they've ever produced. If the North Koreans put a missile with a nuclear warhead on the world market, that's the ultimate nightmare scenario."²⁷⁷

6/94

Robert D. Walpole, deputy director of the CIA nonproliferation center, states, "North Korea is the world's largest proliferator of ballistic missiles. According to Walpole, the DPRK may sell the *Nodong* missile, which is thought to be nuclear-capable, to Iran and possibly to Libya."²⁷⁸

6/94

Israeli Prime Minister Yitzhak Rabin states that the DPRK has delivered to Syria "not just *Scud-C* missiles in addition to the *Scud-B* missiles, [but] also the production capability." According to Rabin, the Syrian missile arsenal poses a much greater threat to Israel than the Iraqi missile attacks during the Gulf War, and could potentially make Israel's Gulf War experience seem like "a children's game."²⁷⁹

6/94

Modifications are currently underway at the Taep'o-dong rocket test stand facility in the DPRK. These modifications are believed to be preparations for a static test of the *Taep'o-dong-2* first stage engine. There are several vehicles at the site, and it is anticipated that "new auxiliary tanks" will soon arrive there.²⁸⁰

Note: See entry 5/94 for information that may be related to the modifications at the Taep'o-dong site.

6/94

U.S. intelligence sources report that, due to inadequate indigenous test facilities, the DPRK might test-fire the *Nodong-1* missile in Iran within 6 to 12 months. The sources claim that Iran is interested in acquiring both the *Nodong-1* and -2 missiles.²⁸¹

(6/94)

It is reported that, according to Japanese intelligence, the 250,000-member General Association of Korean Residents in Japan, Chongnyun, covertly purchases equipment for the DPRK's nuclear and missile programs. If sanctions on the DPRK resulting from the nuclear stand-off on the Korean Peninsula are imposed, Japan will be forced to "shut down the money and technology pipeline" between Chongnyun and the DPRK, but one Japanese government official admits that Chongnyun could continue to send cash and cargo to the DPRK via third countries.²⁸²

(6/94)

According to the ROK 1993-94 Defense White Paper, the DPRK's artillery and missile forces pose the greatest threat to the ROK, and particularly to Seoul whose 12 million people are just 25 miles (40 km) from the DMZ. The DPRK has approximately 2,300 rocket launchers and has test-fired the 1,000-km range *Nodong-1* ballistic missile. Another concern is the DPRK's development of nuclear, chemical, and biological weapons, although many defense analysts doubt that the DPRK has developed a delivery system for a nuclear weapon.²⁸³

6/2/94

According to a Japanese government source, the DPRK test-fires a second upgraded version of the Chinese *Silk-worm* anti-ship missile over the Sea of Japan. The source states, "They are just anti-ship missiles. It is not rare to see North Korea test-launching such missiles, but we

will pay close attention to what is going on there." Pentagon officials are unable to confirm the second test.²⁸⁴

6/6/94

DPRK Deputy Ambassador to the U.N. mission Han Chang-on confirms the test of an anti-ship missile on 5/31/94, and states, "This was just an exercise, normal, usual exercise."²⁸⁵

6/8/94

Yemeni President Ali Abdullah Saleh charged the DPRK with supplying weapons to south Yemeni forces, stating, "Now we have received confirmation about a new contract of MiG-29 (jets) and a number of T-82 (tanks) and tactical missiles contracted with North Korea."²⁸⁶

6/9/94

DPRK Foreign Minister Kim Yong-nam states that the DPRK will continue its missile testing, and that the DPRK has "the will and sufficient capability to defend itself from sanctions." He further states, "Missile launches occur in any country regularly, and the United States and Japan do this most often. Until now no one ever mentioned anything about our launches of experimental missiles. We don't understand why there is so much noise about it now."²⁸⁷

6/9/94

In a report to the ROK parliament, ROK Defense Minister Rhee Byoung-tae states that the DPRK is preparing to test-fire a 1,000-km range ballistic missile. He says that the missile is the Taep'o-dong missile, an upgrade of the Soviet Scud missile, and that the DPRK has been preparing for the test since 5/94. Rhee states, "The North is continuously developing strategic weapons."²⁸⁸

Note: The missile to be tested is almost certainly the *Nodong-1* and not the *Taep'o-dong* as Rhee indicates. Evidence suggests that the *Taep'o-dong* is still in the very early stages of development and will not be ready for a test-firing for some time.

(6/12/94)

KCNA quotes an unnamed DPRK foreign ministry spokesman as stating that the DPRK would not supply arms, such as aircraft and tactical missiles, to South Aden as had been rumored. According to KCNA, the official called the rumors "totally groundless," and insinuated that the rumors were meant to influence the nuclear situation in the DPRK.²⁸⁹

6/14/94

Japan's Minister of State and National Defense Atsushi Kanda tells the Diet Budget Committee that "it is impossible to defend against the *Nodong-1* once it reaches operational status. We believe it necessary to have a large-scale defense system such as the TMD." Director-General of the defense policy bureau of the Japanese Defense Agency stated, "Japan would be able to deal with possible air strikes with its Self-Defense Forces. But with our existing weapons system it would be difficult to deal with long-range ballistic missiles like Rodong because the velocity of their descent is too rapid."²⁹⁰

6/16/94

Joseph Bermudez, an authority on DPRK military and intelligence affairs, states that U.S. intelligence expects a DPRK test-fire of the *Nodong-1* missile "any day now." Bermudez states that the "pattern of movement and activity at the missile test facilities" in the DPRK was similar to that before the two previous missile tests, and that, based on this, he has been expecting a test for about a month. According to Bermudez, the DPRK wants "to show the world that they are somebody to be reckoned with," and adds that the test would be designed to give Washington "some cause for concern."²⁹¹

(6/18/94)

A 1994 posture statement prepared for Rear Admiral Edward Shaefer, Director of U.S. Naval Intelligence, says that the *Nodong* missile will likely be equipped with a nuclear warhead by the year 2000, although this may be achieved as early as 1995.²⁹²

(7/94)

It is reported that the Moscow newspaper *Komsomolskaya Pravda* has reported, "According to press allegations . . . some of our scientists no longer need to risk and negotiate border checkpoints in order to work on the North Korean nuclear program. They sit at home and send their calculations to Pyongyang by computer mail, which it is not yet possible to monitor."²⁹³

7/8/94

Kim Il-sung dies suddenly at the age of 82. His son Kim Jong-il succeeds him as leader of the DPRK.²⁹⁴

7/27/94

DPRK defector Kang Myong-do claims that the DPRK has five nuclear weapons and plans to build an additional five weapons. Kang said that the DPRK was using the negotiations to stall while it built missiles to deliver the weapons. Kang, who is allegedly the son-in-law of DPRK Premier Kang Son-san, indicated that he had acquired his information from the Yongbyon complex's intelligence chief.²⁹⁵

7/29/94

Kim Hyong-ki, spokesman of the ROK Ministry of Unification, stated that the claims of DPRK defector Kang Myong-do have "not been supported by solid proof." Kang claimed that the DPRK had five nuclear bombs and plans to build five more.²⁹⁶

9/10/94

The Kyodo news agency reports that Japan intends to unify the radar networks of its land, sea, and air forces to improve Japanese defenses against a DPRK missile attack. Defense military sources indicated that the radar system would support a missile intercept system, which may be the U.S.-proposed Theater Missile Defense system.²⁹⁷

¹ This report complements the PNS chronologies on PRC missile trade and DPRK nuclear development. As with any work on the DPRK, this report owes a debt of gratitude to the many experts in the field, particularly Joseph S. Bermudez Jr.

² A Note on Nomenclature and Transliteration

In order to avoid confusion, the authors have used the simplest terms possible in describing North Korea's missile systems. In this chronology, no nominal distinction is made between *Scud-B* missiles manufactured in Russia or the DPRK. Any differences that may exist are communicated through context rather than nomenclature. Terms that are obviously incorrect, such as the declaration, in a recent Task Force on Terrorism and Unconventional Warfare report, that *Tsurudo* is the North Korean name for *Nodong-1* even though *Tsurudo* is a Japanese word (and for that matter, unpronounceable in Korean), have been ignored altogether.

Additionally, an attempt has been made to adhere to one system of transliteration. With the exception of *Nodong*, all Korean proper nouns are presented in transliterated spoken form. For example:

<u>Chronology</u>	<u>Other</u>
Nodong	Rodong, No-dong
Taep'o-dong	Taepo-tong, Taepo Dong
Chongnyun	Chongryun
Hamgyong	Hamkyong
Kim Jong-il	Kim Chong-il
Kim Il-sung	Kim Il-song

³ Thomas Omestead, *Foreign Policy*, Summer 1994, pp. 107-108.

⁴ There is insufficient evidence concerning *Taep'o-dong-1* and -2 to conclude whether they are actual systems or merely a propaganda ploy. The CIA has only confirmed that system mock-ups have been seen.

⁵ Yi Sang-won, *Hanguk Ilbo*, 1/28/94, p. 5; in JPRS-TND-94-005, 2/25/

- 94, p. 42.
- ⁶ *Al-Watan Al-Arabi*, 4/15/88, p. 17; in FBIS-NES, 4/20/88, p. 1.
- ⁷ *Izvestiya*, 1/27/94, pp. 1, 4; in JPRS-TND-94-005, 2/25/94, pp. 48-49. Yonhap, 4/23/94; in JPRS-TND-94-011, 5/16/94, pp. 51-52.
- ⁸ Qol Yisra'el, 9/20/93; in JPRS-TND-93-032, 10/12/93, p. 34. Michael R. Gordon, *New York Times*, 12/12/93, pp. 1, 20. David E. Sanger, *New York Times*, 1/20/94, p. A5.
- ⁹ Central Intelligence Agency, *Prospects for the Worldwide Development of Ballistic Missile Threats to the Continental United States*, 11/17/93 acquired via the office of Congressman Ron Dellums.
- ¹⁰ *Christian Science Monitor*, 12/27/93, p. 4.
- ¹¹ The entries in the chronology are as cited in the original sources. Some notes are provided for clarification and analysis. Dates in parentheses refer to the date that information was reported, not to the actual event. In some cases, italics have been added for emphasis.
- ¹² Christopher F. Foss, *Jane's Armour and Artillery 1991-92*, (Jane's Information Group, Coulsdon, Surrey: 1991), p. 719.
- ¹³ Joseph S. Bermudez Jr., *Jane's Soviet Intelligence Review*, 5/89, pp. 203-207.
- ¹⁴ Joseph S. Bermudez Jr., *Jane's Soviet Intelligence Review*, 5/89, pp. 203-207.
- ¹⁵ Christopher F. Foss, *Jane's Armour and Artillery 1991-92*, (Jane's Information Group, Coulsdon, Surrey: 1991), p. 719.
- ¹⁶ Joseph S. Bermudez Jr., *Jane's Soviet Intelligence Review*, 5/89, pp. 203-207.
- ¹⁷ Joseph Bermudez, *Jane's Soviet Intelligence Review*, 5/89, pp. 203-207.
- ¹⁸ Joseph S. Bermudez Jr., *Jane's Soviet Intelligence Review*, 5/89, pp. 203-207.
- ¹⁹ *The Military Balance: 1973-74*, (London: Chatto & Windus, 1973), p. 53.
- ²⁰ Joseph S. Bermudez Jr., *Jane's Soviet Intelligence Review*, 5/89, pp. 203-207.
- ²¹ Hua Di, *Asia-Pacific Defence Reporter*, 9/91, pp. 14-15. John Wilson Lewis and Hua Di, *International Security*, Fall 1992, pp. 5-40.
- ²² Christopher F. Foss, *Jane's Armour and Artillery 1991-92*, (Jane's Information Group, Coulsdon, Surrey: 1991), p. 719.
- ²³ Joseph S. Bermudez Jr. and W. Seth Carus, *Jane's Soviet Intelligence Review*, 4/89, pp. 177-181.
- ²⁴ Yonhap, 6/24/93; in JPRS-TND-93-020, 6/28/93, p. 1.
- ²⁵ Christopher F. Foss, *Jane's Armour and Artillery 1991-92*, (Jane's Information Group, Coulsdon, Surrey: 1991), p. 749.
- ²⁶ Hua Di, *Asia-Pacific Defence Reporter*, 9/91, pp. 14-15. John Wilson Lewis and Hua Di, *International Security*, Fall 1992, pp. 5-40.
- ²⁷ Joseph S. Bermudez Jr., *Jane's Intelligence Review*, 9/91, p. 404-411.
- ²⁸ John Wilson Lewis and Hua Di, *International Security*, Fall 1992, pp. 5-40.
- ²⁹ *Terminal Report on Project: DP/DRK/79/003; Establishment of Digital Bi-Polar Integrated Circuit Plant in DPR of Korea*, (ET&T Development Corporation Ltd.: New Delhi).
- ³⁰ Joseph S. Bermudez Jr., *Jane's Soviet Intelligence Review*, 5/89, pp. 203-207.
- ³¹ Joseph S. Bermudez Jr., *Jane's Soviet Intelligence Review*, 5/89, pp. 203-207.
- ³² Joseph Bermudez, *Jane's Defence Weekly*, 4/10/93, pp. 20, 22.
- ³³ KCNA, 8/21/81; in FBIS-APA-81-162, 8/21/81, p. D7. Joseph S. Bermudez Jr., *Jane's Intelligence Review*, 10/92, pp. 452-458.
- ³⁴ KCNA, 4/5/83; in FBIS-APA-83-067, 4/6/83, pp. D11-D13.
- ³⁵ KCNA, 9/6/83; in FBIS-APA-83-174, 9/7/83, p. D11. KCNA, 9/7/83; in FBIS-APA-83-175, 9/8/83, pp. D11-D15.
- ³⁶ Tehran Domestic Service, 10/27/83; in FBIS-NES-83, 10/28/83, p. 12. Joseph S. Bermudez Jr., *Jane's Intelligence Review*, 10/92, pp. 452-458.
- ³⁷ Joseph S. Bermudez Jr., *Jane's Soviet Intelligence Review*, 8/90, pp. 343-345. *Asia-Pacific Defence Reporter*, 4/91, p. 24. Yonhap, 6/24/93; in FBIS-EAS-93-120, 6/24/93, p. 19.
- ³⁸ *Pukan*, 6/85, pp. 132-141; in JPRS-KAR-85-070, 10/31/85, pp. 1-9. Joseph Bermudez, *Jane's Defence Weekly*, 4/10/93, pp. 20, 22.
- ³⁹ Joseph S. Bermudez Jr. and W. Seth Carus, *Jane's Soviet Intelligence Review*, 4/89, pp. 177-181.
- ⁴⁰ KCNA, 11/8/84; in FBIS-APA, 11/8/84, pp. D19-D20. KCNA, 11/21/84; in FBIS-APA, 11/27/84, p. D14. Joseph S. Bermudez Jr., *Jane's Intelligence Review*, 10/92, pp. 452-458.
- ⁴¹ Kenneth Timmerman, *Mednews*, 12/21/92, p. 5.
- ⁴² Joseph Bermudez, *Jane's Defence Weekly*, 4/10/93, pp. 20, 22.
- ⁴³ Joseph Bermudez, *Jane's Defence Weekly*, 4/10/93, pp. 20, 22.
- ⁴⁴ *Terminal Report on Project: DP/DRK/79/003; Establishment of Digital Bi-Polar Integrated Circuit Plant in DPR of Korea*, (ET&T Development Corporation Ltd.: New Delhi).
- ⁴⁵ IRNA, 12/7/86; in FBIS-NES, 12/10/86, p. I5.
- ⁴⁶ Yonhap (Seoul), 2/2/91; in JPRS-TND-91-003, 2/25/91, pp. 6-7. *Asia-Pacific Defence Reporter*, 4/91, p. 24. *Hanguk Ilbo* (Seoul), 2/8/91, p. 8; in JPRS-TND-91-008, 5/31/91, pp. 7-9.
- ⁴⁷ *Korea Herald*, 1/29/87, p. 1; in FBIS-APA-87-020, 1/30/87, p. E4.
- ⁴⁸ *Seoul Sinmun* (Seoul), 10/9/91, p. 5; in JPRS-TND-91-017, 11/7/91, pp. 8-9.
- ⁴⁹ *New York Times*, 6/7/87, pp. A1, A15.
- ⁵⁰ Joseph S. Bermudez Jr., *Jane's Soviet Intelligence Review*, 5/89, pp. 203-207. Joseph S. Bermudez Jr., *Jane's Intelligence Review*, 4/92, pp. 147-152.
- ⁵¹ KCNA, 6/10/87; in FBIS-EAS-87-111, 6/10/87, p. C1.
- ⁵² Joseph S. Bermudez Jr., *Jane's Soviet Intelligence Review*, 8/90, pp. 343-345.
- ⁵³ *Wall Street Journal*, 12/21/87, p. 1.
- ⁵⁴ *Wall Street Journal*, 12/21/87, p. 9.
- ⁵⁵ Kenneth Timmerman, *Mednews*, 12/21/92, pp. 4-5.
- ⁵⁶ Joseph Bermudez, *Jane's Defence Weekly*, 4/10/93, pp. 20, 22. Yonhap, 6/24/93; in JPRS-TND-93-020, 6/28/93, p. 1.
- ⁵⁷ *Asia-Pacific Defence Reporter*, 4/91, p. 24.
- ⁵⁸ Steven Emerson, *Wall Street Journal*, 7/10/91, p. A12.
- ⁵⁹ KCNA, 1/19/88; in FBIS-EAS-88-011, 1/19/88, pp. 14-15.
- ⁶⁰ Joseph S. Bermudez Jr., *Jane's Soviet Intelligence Review*, 8/90, pp. 343-345.
- ⁶¹ AFP, 4/1/88; in FBIS-NES-88-063, 4/1/88, p. 45.
- ⁶² Tehran Domestic Service, 4/14/88; in FBIS-NES, 4/15/88, p. 49.
- ⁶³ Joseph S. Bermudez Jr. and W. Seth Carus, *Jane's Soviet Intelligence Review*, 4/89, pp. 177-181.
- ⁶⁴ Steven Emerson, *Wall Street Journal*, 7/10/91, p. A12.
- ⁶⁵ Yu Yong-won, *Choson Ilbo*, 3/20/94, p. 4; in JPRS-TND-94-008, 4/1/94, pp. 12-13.
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