

Chapter 2

Nuclear Weapons and Ballistic Missiles in East Asia

Today, 10 years after the end of the Cold War, the situation relating to nuclear weapons in Asia began to take on a complexion different from that in other regions. In Europe, all the theater and tactical nuclear weapons (except several hundreds of U.S. gravity nuclear bombs) of the United States and Russia have been removed, and the deployed number of United Kingdom's and France's nuclear weapons has been reduced. And nuclear-weapon-free zones have already been in place in Africa and South America.

In Asia, however, as typified by nuclear tests conducted by India and Pakistan in May 1998, a buildup of nuclear arsenals and proliferation of nuclear weapons are in progress contrary to the worldwide trend toward nuclear arms reduction and non-proliferation. In East Asia, China, the only nuclear weapon state in this region, is pressing ahead with a program designed to modernize its nuclear capability. And the suspicion about nuclear weapons development by North Korea has not been dispelled completely as yet.

The number of ballistic missiles is on the rise in the Middle East, Southwest Asia, South Asia and East Asia. In East Asia, an increase in the number of ballistic missiles is pronounced in China and North Korea. Furthermore, in this region, there exists the problem of inadequate management of nuclear materials by Russia that could lead to proliferation of nuclear weapons.

On the other hand, there are moves in East Asia to start research into, or studies of, ballistic missile defense (BMD). Japan and the United States instituted a joint technology research on BMD, and Taiwan indicated its intention to undertake research and development of BMD on its own.

1. Nuclear Weapons and Ballistic Missiles Buildup in East Asia

(1) The Stance of East Asian Countries

Of the countries located in East Asia, China and Russia are approved to possess nuclear weapons under the Nuclear Non-

Proliferation Treaty (NPT). The rest of the countries in this region have waived the option to develop and possess nuclear weapons, and have become a party to the NPT as a non-nuclear weapon state.

Today, the biggest proliferation problem facing East Asia is the suspected development of nuclear weapons by North Korea, suspicions raised in the late 1980s. North Korea agreed to freeze its production of weapons-grade nuclear materials pursuant to the Agreed Framework concluded with the United States in October 1994. However, on occasion North Korea has taken an uncooperative attitude toward part of the inspection activities carried out by the International Atomic Energy Agency (IAEA) to verify North Korea's compliance with the Agreed Framework.

In East Asia, there are three countries — Russia, China and North Korea — that possess ballistic missiles with a range exceeding 300 kilometers. Russia has been reducing the number of missiles it has deployed pursuant to the Treaty on the Elimination of Intermediate-Range and Shorter-Range Missiles (INF Treaty), and the Treaty on the Reduction and Limitation of Strategic Offensive Arms (START I Treaty) concluded with the United States. But China and North Korea have been increasing the number of their ballistic missiles. In the case of China, an increase in the number of what it classifies as short-range missiles (with a range of 1,000 kilometers or less) and intercontinental ballistic missiles (with a range of 8,000 kilometers or more) is pronounced. North Korea is devoting major efforts to strengthening not only short- and medium-range ballistic missiles but long-range ones. In testimony given before a U.S. Senate committee on September 16, 1999, Robert D. Walpole, U.S. national intelligence officer for strategic and nuclear programs, stated that Taepo Dong-2 is believed to potentially have the capability of an intercontinental ballistic missile (ICBM).

South Korea, also, has begun to show interest in strengthening its missile capability. The Military Balance 1999–2000 of the International Institute for Strategic Studies, perceives South Korea as a

country armed with ballistic missiles. However, the range and the throw-weight of the ballistic missiles that South Korea has developed and deployed are restricted to less than 180 kilometers and 500 kilogram, respectively, under the U.S.-South Korea memorandum of understanding exchanged between the two countries in 1979. Although South Korea has shown interest in possessing longer-range missiles, the United States has taken a cautious position in the interest of its policy of non-proliferation of ballistic missiles. In November 1999, the two countries discussed the matter but reportedly have not reached an agreement.

(2) China: Growing Arsenal of Nuclear Weapons and Ballistic Missiles

The strengthening of China's nuclear and ballistic missile capability is continuing if at a slow pace. China test-launched in August 1999 an ICBM called Dong Feng-31 (DF-31) that has a maximum range of about 8,000 kilometers. DF-31, a successor of the fixed, liquid-fueled Dong Feng-4 (CSS-3), is a mobile ICBM that uses solid fuel to enhance its rapid-launch capability, and China is seen deploying 10 to 20 of them. National Intelligence Officer Walpole said that these DF-31s are believed to primarily aim at targets in Russia and Asia. China is developing another ICBM called the Dong Feng-41 (DF-41), a successor of the fixed, liquid-fueled ICBM Dong Feng-5 (CSS-4), which is believed to have a range of about 12,000 kilometers. DF-41s are expected to enter service around 2005, and as with DF-31s, are mobile ICBMs using solid fuel. It is rumored that China may equip both DF-31s and DF-41s with a multiple independently targetable re-entry vehicle (MIRV). However, given the fact that the United States and Russia are planning to discard MIRVed ICBMs, and as the deployment of MIRVed ICBMs might be considered as reinforcement of its counterforce capability, installation of MIRVs on its missiles by China is unlikely. However, the possibility of China installing a simple multiple re-entry vehicle on its ballistic missiles cannot be ruled out.

China, in rebuttal of an allegation made at the U.S. House select committee chaired by Rep. Christopher Cox, also known as the Cox Committee, about spying on nuclear technology by China as the committee

A case mounted on a truck which, China claims, contains *Dong Feng-31* (observed in the military parade commemorating the 50th founding anniversary)
(Kyodo Photo)

claimed to be, issued a statement in mid-July 1999 saying that it had mastered the neutron bomb production technology. The neutron bomb is a nuclear bomb designed to release radiation containing mainly neutrons, thus causing extensive loss of life but relatively little damage to buildings and property.

Table 2-1. The Present Status of China's Nuclear Missiles, and Its Development Program

	Deployment Started in	Fuel	Range (km)	Throw- weight (kg)	CEP (m)	Number Deployed
<i>Dong Feng-3</i>	1971	liquid	2,800	2,150	1,000	less than 100
<i>Dong Feng-4</i>	1980	liquid	5,500	2,200	1,500	20–50
<i>Dong Feng-5</i>	1981	liquid	12,000	3,200	500	20
<i>Dong Feng-21</i>	1987	solid	1,800	600	—	30–50
<i>Dong Feng-15</i>	1991	solid	600	500	300	400+
<i>Dong Feng-11</i>	1992	solid	280	800	600	200+
M-7	1992	solid	150	190	—	—
M-18		—	1,000+	—	—	—
<i>Dong Feng-25</i>		solid	1,700	2,000	—	—
<i>Dong Feng-31</i>		solid	8,000	700	—	—
<i>Dong Feng-41</i>		solid	12,000	—	—	—
<i>Julang-1</i>	1983	solid	1,900	600	—	—
<i>Julang-2</i>		solid	12,000	700	—	—

Source: Data from Zalmay Khalilzad et al., *The United States and a Rising China: Strategic and Military Implications* (Santa Monica, CA: RAND, 1999), p. 43.

In the field of submarine-launched ballistic missiles (SLBM), China has developed one called Julang-1 (CSS-N-3) and is in the process of developing another version called Julang-2 (CSS-N-4). The latter is a SLBM based on the DF-31 and is expected to enter service around 2002. At present, one nuclear-powered, ballistic-missile submarine (SSBN) of the Xia-class has entered service in China, and it is planning to build a new version of the SSBN as a successor to the Xia-class.

If and when China deploys mobile ICBMs, the survivability of its ICBM force will be enhanced, further strengthening its deterrent power. Especially, as the number of ICBMs deployed by China is far smaller than that of the United States and Russia, the enhanced survivability of its ICBMs may have a profound effect on its deterrent power. It is to be noted, however, that even if most of its ICBMs were converted into mobile ones, its deterrent strategy may not be changed as much as one would have thought given the limited number of its ICBMs and their accuracy. Regarding its nuclear strategy vis-à-vis the United States, China is expected to pursue continuously a “minimum nuclear deterrence strategy” based on its capability to strike urban centers in retaliation. On the other hand, concerning deterrent strategy against its neighboring countries such as Russia and India, China has more means by employing theater ballistic missiles. But given the limited accuracy of its ballistic missiles, its strategy vis-à-vis these countries is likely to go not much beyond a minimum nuclear deterrence strategy.

(3) North Korea: Suspected Nuclear Weapons Development, and the Ballistic Missile Problem

While the suspicion about nuclear weapons development by North Korea has not yet been completely dispelled, the country has been pressing ahead with its program for the development of ballistic missiles. Together, they intensify the seriousness of the threat posed by North Korea. According to certain North Korea watchers, there is a possibility that North Korea has extracted a certain

amount of weapons-grade nuclear materials sufficient to build one or two nuclear explosive devices by the time it signed the Agreed Framework in October 1994. If this is to be believed, North Korea is the nearest to possessing nuclear weapons among the countries suspected of developing nuclear weapons such as Iran, Iraq and Libya.

What North Korea had agreed to in the Agreed Framework it signed with the United States in October 1994 was the freezing of production of weapons-grade nuclear materials, and this has not necessarily dispelled completely the suspicion about nuclear weapons development thus far by North Korea. An inspection of North Korean nuclear-related facilities to determine the existence — or the nonexistence — of weapons-grade nuclear materials allegedly produced by North Korea is supposed to be conducted when the light-water reactor project being carried out by the Korean Peninsula Energy Development Organization (KEDO) is nearly finished. Therefore, the existence or nonexistence of weapons-grade nuclear materials will not be determined until such time as the IAEA will have completed its comprehensive inspection. Moreover, research and development of triggering devices and nuclear weapons delivery vehicles such as missiles by North Korea are not restricted.

An article carried by the New York Times (August 17, 1998) reported that North Korea was building an underground facility (at Kumchang-ni, as it turned out subsequently) that seemed to be related to nuclear weapons development. And this has sparked once again the suspicion about nuclear weapons development by North Korea. The United States repeatedly demanded that North Korea allow it to examine the underground facility and finally extracted North Korea's consent in March 1999 to allow its delegation enter and inspect the underground facility in May the same year. After having worked out with North Korea a schedule and procedure for an on-site inspection, a team of experts of the U.S. Department of State visited Kumchang-ni and inspected its underground facility.

The State Department issued a statement on June 25, 1999, that "the U.S. has concluded that, at present, the underground site at Kumchang-ni does not violate the 1994 U.S.-DPRK [Democratic People's Republic of Korea] Agreed Framework."

It may be said that the suspicion about the development of nuclear weapons at the underground facility at Kumchang-ni has been unraveled at least for the time being. However, this is not to say that the suspicion has been completely removed as North Korea is said to have underground facilities at many other locations. Furthermore, North Korea is taking an uncooperative attitude toward the inspection by the IAEA. In response to a request received from the U.N. Security Council in November 1994, a team of the IAEA inspected the nuclear facilities of North Korea to verify the adherence of North Korea to the Agreed Framework. However, North Korea refused to allow the IAEA team to install monitoring equipment for liquid nuclear wastes at the reprocessing plant and to sample or measure at any location to ensure that there have been no operations at the plant.

North Korea has been conducting research and development of ballistic missiles since the early years of the 1980s. At present, it has deployed Scud B ballistic missiles with a range of some 300 kilometers and Scud C ballistic missiles with a range of about 500–600 kilometers that covers almost all of the targets in South Korea. Scud B and Scud C can be mounted on a highly mobile transport-erector launcher.

It is highly likely that North Korea has deployed No Dong ballistic missiles with a range of about 1,300 kilometers that can reach most of the targets in Japan. As with Scud missiles, No Dong can be mounted on a mobile launcher and thus has mobility. According to the testimony given before the U.S. Senate by George J. Tenet, director of central intelligence, the Ghauri of Pakistan and Shahab-3 of Iran are believed to have been manufactured on the basis of No Dong. In addition, North Korea is developing Taepo Dong-1 and Taepo Dong-2, both of which have a greater range than

the No Dong. It is said that the range of Taepo Dong-1 is more than 1,500 kilometers and that it can reach almost any target in Japan, including Okinawa. Taepo Dong-2 is believed to use a new type for its first-stage booster and No Dong's for its second-stage booster, and has a range of 3,500–6,000 kilometers. The U.S. intelligence authorities think that if a third booster is added to Taepo Dong-2, it could cover the entire continent of the United States.

2. Control of Nuclear Weapons and Ballistic Missiles, and the Proliferation Problem

(1) Reactions of the United States, South Korea and Japan to the North Korean Missile Problem

After high-level talks with the United States in September 1999 in Berlin, North Korea announced that it would not launch a missile while the talks were under way, and has taken, if temporarily, an accommodative stance on the issue of ballistic missiles raised by the United States. Meanwhile, it repeated its position that “the launch of a missile belongs to the sovereignty of an independent state.” Therefore, whether North Korea will continue to observe the freeze on the launch of missiles will depend on the reaction of the United States, South Korea and Japan. Besides, North Korea has not shown a willingness to hold back the development, production, deployment, or export of missiles.

While strengthening its own ballistic missile force, North Korea had been exporting its missiles and their parts to such countries as Iran, Syria and Pakistan. Concerned about the strengthening of ballistic missile force and export of ballistic missiles by North Korea, the United States proposed to North Korea to have missile talks, and the first meeting was held in April 1996. During the talks, the United States demanded that North Korea stop the development, production and testing of missiles with a range exceeding 300 kilometers, and exporting them and related materials to other countries. However, despite repeated talks held with North

Korea in June 1997, October 1998 and March 1999, no substantial progress had been made.

Meanwhile, it was feared that following the launch of a missile on August 31, 1998, North Korea might launch another one in 1999. In June and again in August 1999, high-level talks on this issue were held between Charles Kartman, U.S. special envoy for the Korean peace talks, and Vice Foreign Minister Kim Gye Gwan of North Korea, but they failed to reach an agreement. However, during the U.S.-North Korea talks held on September 7–12, 1999, in Berlin, North Korea made a remark that the United States interpreted as a consent to a temporary freeze on the launch of missiles. And after the Berlin talks, North Korea announced that it would temporarily freeze the launch of ballistic missiles on the condition that the high-level talks between the two countries be continued.

In response, the United States announced on September 17 that it would lift part of the economic sanctions it had kept against North Korea since the Korean War. The Japanese government lifted the sanctions it had imposed on North Korea in the wake of the launch of a ballistic missile in August 1998. More specifically, the Japanese government lifted on November 2 its ban on chartered flights directly between Japan and North Korea, and rescinded on December 14 the measures it had taken with respect to food aid and talks for normalization of diplomatic relations. These actions might have been taken to underscore the significance of the close collaboration with which Japan, the United States and South Korea deal with North Korea.

It is not quite clear why North Korea temporarily froze the launch of its ballistic missiles in September 1999, but it must be mentioned that the close collaboration these three countries had demonstrated to deter North Korea from launching a ballistic missile again was a factor. The three countries had firmly stuck to the anti-missile stance by stressing the political and economic hardship North Korea stands to suffer if it went ahead with the launch of

another ballistic missile. It is thought that North Korea might have judged that in order for the Kim Jong Il regime to maintain its hold on power, it is more important to improve its relations with the United States and its domestic economy thereby than to strengthen its missile force.

North Korea did temporarily freeze the launch of ballistic missiles, but it does not necessarily mean that the problem relating to its missiles — the development and strengthening of its ballistic missile, and their export — has been solved. North Korea froze their launch only temporarily on the condition that the United States keep talking with North Korea, and even if North Korea freezes their launch continuously, it has not shown any restraint on the development, deployment and export of ballistic missiles. It is unthinkable that North Korea will waive the missile or nuclear card of its own volition until such time as it will have confidence in the sustainability of the Kim Jong Il regime by concluding a peace accord with the United States and by stabilizing its domestic economy. On the other hand, the United States has not changed its policy of labeling North Korea as a “state sponsor of terrorism.” Therefore, the ban the U.S. government has imposed on the export of weapons, and dual-use technologies and goods, economic aid other than humanitarian aid, and loans made through an international financial institution is left intact.

(2) Management of Nuclear Materials in Russia, and International Cooperation

After the collapse of the Soviet Union, the inadequacy of management of nuclear weapons and weapons-grade nuclear materials by Russia has long been a concern of the international community, and since the economic crisis triggered by a free fall of the ruble in August 1998, the situation has worsened further. For instance, it was reported that in protest to arrears of pay and a shortage of food and winter clothes, guards at nuclear facilities refused to perform their duty, and that due to frequent power failures, the alarm

system of nuclear facilities stopped working. What is worse, the protection, control and accounting of weapons-grade nuclear materials, and their inventory are woefully inadequate, so that the managers of nuclear facilities do not seem to know how much nuclear materials they have in their facilities. If weapons-grade nuclear materials were allowed to be smuggled out of Russia on account of loose management, the nuclear non-proliferation regime may be shaken to its foundations.

Seven industrial nations, including Japan and the United States, offered new financial cooperation to Russia to help it tighten up its control of nuclear materials. For instance, in a State of the Union message delivered before Congress in January 1999, President Bill Clinton indicated that the United States was ready to give \$4.5 billion in aid over the next five years to the republics of the former Soviet Union to help them discard nuclear weapons. When Foreign Minister Masahiko Koumura of Japan visited Russia in May 1999, he conveyed to his Russian counterpart a message of Prime Minister Keizo Obuchi about a cooperation plan worth \$200 million called “Japan-Russian Federation Joint Efforts for Disarmament and Environmental Protection,” consisting of three parts: one for safe dismantling of decommissioned Russian nuclear submarines in the Russian Far East; another for promoting the conversion of the military resources to the civilian sector; and a third for the management and disposition of Russian surplus weapons-grade plutonium.

While financial assistance to strengthen Russia’s nuclear management system is important, it is no less important to create a system that ensures the proper use of such funds for the given purposes. To accomplish this, it is necessary to create, instead of providing funds to Russia individually by aid donors or international financial agencies, an international body to comprehensively manage and control the funds in ways to effectively check the use of such aid by Russia.

Most important, however, is the stance of Russia on the manage-

ment of nuclear materials. It is reported that the Russian authorities in charge of managing nuclear materials are more interested in making commercial transactions with China and Iran for the purpose of earning hard currencies than strengthening their nuclear materials management system by taking advantage of foreign aid from Western countries. Russia should bear in mind that as a permanent member of the U.N. Security Council, it is expected to play an important role in maintaining international peace and stability.

One thing that must be noted in connection with the nuclear problem of Russia is the fact that there have emerged signs in Russia indicating attempts to rely on tactical nuclear weapons to complement the growing weakness of its conventional forces. Russia has issued a statement to the effect that pursuant to the nuclear disarmament measure announced by President Mikhail Gorbachev in October 1991 and a similar one announced by President Boris Yeltsin in January 1992, Russia had removed all of the tactical nuclear weapons deployed on its naval vessels, including its Pacific Fleet.

However, as these measures were taken unilaterally by the former Soviet Union and Russia, the removal of its sea-based nuclear weapons has not been verified by a third party. More recently, Russia has made clear its intention to retract its policy of no first use of nuclear weapons, and as its conventional forces have weakened, Russia started taking a stance attaching importance to tactical nuclear weapons. Given such changes in its policy stance, the possibility of Russia having redeployed sea-based or ground-launched tactical nuclear weapons cannot be ruled out. As an agenda for the third strategic arms reduction talks agreed to between the United States and Russia in March 1997, the two countries agreed that they discuss measures for regulating and enhancing the transparency of tactical nuclear weapons. Formal negotiations for a third Treaty on Further Reduction and Limitation of Strategic Offensive Arms (START III) have to await the ratification of

START II by Russia. And the international community is awaiting an early ratification of START II by Russia.

(3) Inadequate Non-Proliferation Policy of China

Of late, China has begun to show a stance of keeping pace with the efforts of the international community to prevent the proliferation of nuclear weapons and ballistic missiles. However, the approach it has taken fell short of a level expected by the international community. In the 1960s, China had taken a negative stance on the non-proliferation. However, toward the end of the 1970s when its intercourse with Western countries had grown increasingly active, China began, in a departure from its early position, to take a positive stance gradually falling into step with the nuclear non-proliferation policy of Western countries. For instance, China joined the IAEA in 1984 and signed the NPT in March 1992. At the NPT Review and Extension Conference held in May 1995, China supported an indefinite extension of the NPT along with the United States, United Kingdom, France and Russia, and signed the Comprehensive Test Ban Treaty (CTBT) that was opened for signature in September 1996, although China had conducted nuclear tests twice immediately before it signed it. One factor that had persuaded China to change its stance on the nuclear non-proliferation regime was its realization that an active involvement in international efforts for arms control and disarmament will contribute to regional and international peace and stability, and will provide a base for its economic development, the top priority for the "reform and opening-up" policy it has been pursuing.

However, China's non-proliferation policy still leaves a number of problems. For instance, it joined in October 1997 the Zangger Committee, which is studying guidelines for implementing the export control provisions of the NPT. However, it showed no interest in joining the Nuclear Suppliers Group (NSG), in which participating countries pledge to take measures to restrict their export of nu-

clear materials under their respective domestic legislations. Established in 1970 pursuant to the provision of Article 3 of the NPT, the Zangger Committee is nothing more than an organization to weigh and select categories of goods subject to the ban on exports. To ban the export of certain categories of goods on the basis of international standards, the country proposing to impose such a ban must affiliate itself with the NSG. There are a number of reasons why China is wary of joining the NSG. One of them, it seems, is fears China entertains that as the NSG ban applies not only to goods that are exclusively used for developing atomic power but also to dual-use goods, its affiliation would hamper the development of the economy and technological level of the Third World countries. Furthermore, some analysts point out that the domestic laws and administrative procedures of China have not yet fully developed to implement the export ban required by the NSG.

China's stance on non-proliferation of missiles has not been clearly defined. At the request of the United States, China issued in October 1994 a statement promising that it would observe the guidelines and parameters of the Missile Technology Control Regime (MTCR). However, its promise seems to apply only to banning export of ground-to-ground missiles, leaving the doubt that China's promise does not apply to the export of other categories of missiles, and missile-related components and technology. Robert D. Walpole, U.S. national intelligence officer for strategic and nuclear programs, said that China was giving assistance to several countries to develop missiles.

Similarly, China's position on nuclear disarmament is not clear-cut. While advocating the reduction of U.S. and Russian nuclear weapons, the creation of nuclear-weapon-free zones and a treaty on prohibition and destruction of nuclear weapons, China has been endeavoring to strengthen its own nuclear and missile arsenals, quantitatively as well qualitatively, much less reducing them. Where the Fissile Material Cutoff Treaty (FMCT), which could lead to a nuclear disarmament, is concerned, the five nuclear weapon

states, including China, have agreed to an early start of its negotiation. But, China alone has never officially committed itself to suspension of its production of fissile materials.

Incidentally, it was reported that when Foreign Minister Tang Jiaxuan of China visited Singapore in July 1999 to attend an ASEAN Post Ministerial Conference, he indicated his consent, in principle, to signing the protocol to the Treaty on the Southeast Asia Nuclear Weapon-Free Zone (SEANWFZ). This was not the first time China had expressed such intention. In fact, China has long been favoring the creation of a nuclear-weapon-free zone. However, China has refused to sign the protocol of the SEANWFZ Treaty, which was signed in December 1995 and went into force in March 1997, on the grounds that the nuclear-weapon-free zone prescribed in the treaty included part of the waters in the South China Sea that it had declared as its territorial sea under its Law on Territorial Seas and Adjacent Zones of 1992. That China indicated its intention to sign the treaty this time around might be because it had extracted a pledge from signatories of the SEANWFZ Treaty that signing the protocol is "without prejudice" to the Chinese claim expressed in the law, although the indication can still be interpreted as a political maneuver.

(4) The Receding Entry into Force of the CTBT, and East Asian Countries

The Comprehensive Nuclear Test Ban Treaty (CTBT) was adopted by the U.N. General Assembly and opened for signature in September 1996. Three years after that, or as of the end of September 1999, there was little prospect of its coming into force anytime soon. In the United States, which had played a leading role in its negotiations from start to finish, the Senate rejected the ratification of the CTBT, casting a dark cloud over the prospects of the treaty. The CTBT is designed to contribute to the prevention of proliferation of nuclear weapons and create a new environment conducive to promoting nuclear disarmament by totally banning

nuclear weapon test explosion or any other nuclear explosion that would lead to the development of new nuclear weapons and qualitative improvement of the existing ones.

As of October 8, 1999, 154 countries had signed the CTBT, but only 51 of them had ratified it. For the CTBT to take effect, 44 countries that have been designated in Annex 2 to the CTBT as those which have the capability of developing nuclear weapons must sign and ratify. At the last count, 41 of these countries have signed and 26 of them have ratified it. The three (of the 44) countries which are not yet to sign the CTBT are India and Pakistan, both of which went ahead with nuclear test explosions in May 1998, and North Korea. Although the three nuclear weapon states (the United States, Russia and China) signed, they have not ratified the CTBT as of the end of 1999.

Article 14 of the CTBT provides that if the CTBT fails to take effect after three years from the date on which countries started signing it, a Conference on Facilitating the Entry into Force of the CTBT (the Conference) must be held. Pursuant to this provision, the Conference was held in Vienna on October 6–8, 1999, under the chairmanship of former Foreign Minister Masahiko Koumura of Japan. A total of 96 countries were represented, which included four non-signatories (Pakistan and Libya, etc.), but two other non-signatories, namely North Korea and India, did not participate in the Conference. The final declaration adopted by the Conference contained a passage — although not specifically named — urging India, Pakistan and North Korea to sign, and nuclear weapon states that had not yet ratified (the United States, Russia and China), to ratify the CTBT at an early date. This declaration was adopted unanimously by those attending the Conference.

However, despite the strong request of the Clinton administration, the U.S. Senate voted to reject the bill for the ratification of the CTBT on October 14, 1999, less than a week from the conclusion of the Conference. As the United States is a state whose ratification is needed for the CTBT's entry into force, the rejection by

the U.S. Senate has created another hurdle hindering an early effectuation of the CTBT. Yet, its impact does not stop there.

Apparently, the State Duma of Russia, or its lower house had been watching the move of the United States, and the rejection by the U.S. Senate has delayed the likelihood of the Duma ratifying the treaty at an early date. It will also have a negative impact on India and Pakistan, which had indicated, if indirectly, their intention to sign the CTBT if only not to hamper the entry into force of the CTBT. And a call on North Korea to sign the CTBT would have little power of persuasion on that country.

However, this is not to say that the refusal by the U.S. Senate to ratify the CTBT will necessarily lead to the resumption of nuclear tests by nuclear weapon states, India or Pakistan. Under Article 18 of the Vienna Convention on the Law of Treaties, "A state is obliged to refrain from acts that would defeat the object and purpose of a treaty when: it has signed the treaty." As a matter of fact, the five nuclear weapon states and Pakistan that had participated in the Conference have endorsed the final declaration of the Conference, which said that countries would not do anything that would defeat the object and purpose of the CTBT (in other words, they would not conduct nuclear tests). Immediately after the U.S. Senate had refused to ratify the CTBT, India, which had not signed it, reaffirmed its position that it would continuously observe the nuclear test ban it has imposed on itself and that it would not stand in the way of the CTBT's entry into force. Chinese Foreign Ministry spokeswoman Zhang Qiyue stated that "China deeply regrets" that the U.S. Senate voted to reject the ratification of the treaty, but that China's position on the CTBT remained unchanged, and indicated that it would expedite its domestic procedures for ratifying it and make efforts for its early entry into force.

Nevertheless, it is a fact that a new obstacle hindering the effectuation of the CTBT has emerged. One of the reasons that had prompted the U.S. Senate to refuse to ratify it was its mistrust of CTBT provisions relating to the verification regime. To be sure, it

is not certain if the verification regime to be instituted under the CTBT is capable of detecting all nuclear test explosions, including a nuclear test conducted on an extremely small scale. However, it is generally believed that it can detect nuclear test explosions that are militarily significant, such as those considered essential for downsizing or improving the quality of nuclear warheads. Following the adoption of the CTBT in September 1996, a Preparatory Commission for the Comprehensive Nuclear Test Ban Treaty Organization and a Provisional Technical Secretariat were established to institute the global verification regime ahead of the entry into force of the CTBT. It would be necessary to press ahead with the groundwork for creating a credible inspection and verification system as provided in the CTBT and call on the U.S. Senate to ratify it.

3. BMD and East Asian Security

(1) The Stance of Japan, Taiwan and South Korea

Since September 1993, Japan has been conducting with the cooperation of the United States research into ballistic missile defense (BMD) to defend Japan from the threat of ballistic missiles. With the approval of the Security Council of Japan in December 1998, the Japanese government has decided to launch in fiscal 1999 a Japan-U.S. joint technology research to explore the technical feasibility of developing a Navy Theater Wide Defense (NTWD) system that was being studied as part of the theater missile defense (TMD) by the United States. The NTWD is an upper-tier defense system designed to intercept incoming ballistic missiles above the atmosphere.

In March 1996, ballistic missiles launched by China in the name of a military exercise fell in the neighboring waters off Taiwan. For a Taiwan that is under missile threat from mainland China, improvement of its capability to defend itself from a missile attack is an important defense priority. In a report Defense Minister Tang

Fei of Taiwan delivered before the Central Standing Committee of the ruling Kuomintang in August 1999, he stressed the necessity of introducing a TMD system mainly based on a lower-tier defense system. The following day, the Executive Yuan, or Taiwan's executive branch, adopted a policy for introducing a TMD system and decided to develop one on its own in parallel with the purchase of one from the United States.

Despite the threat of Scud B and Scud C missiles from North Korea, South Korea has not exercised its options to develop a TMD system on its own or jointly with the United States. As reasons, South Korea's Defense Minister Chun Yong Taek pointed out in March 1999 that the TMD system was not an effective means for defending Seoul, that it was too costly and that the TMD system might breed suspicion and anxiety in neighboring countries, thereby triggering an arms race among them.

It appears that South Korea plans to strengthen its deterrent power based on its capability to retaliate against an attack by North Korea as an alternative to the TMD system. In point of fact, South Korea has requested the United States to agree to extending the limit on the range of missiles that South Korea can possess, up to 300 kilometers by amending the bilateral memorandum of understanding that currently limits the range to 180 kilometers. A missile with a range of 300 kilometers can reach most of the targets in North Korea. Furthermore, it is reported that South Korea has shown interest in research and development of ballistic missiles with a range of 500 kilometers that can cover the entire territory of North Korea.

(2) Demarcation of Strategic ABM and TMD Systems, and the Reaction of China and Russia

The development and deployment of the TMD system the United States is planning to carry out is based on a precondition that the substance of provisions of the Treaty on the Limitation of Anti-Ballistic Missile Systems (the ABM Treaty) concluded between the

United States and the Soviet Union in May 1972 be clarified. The interceptor missile system whose deployment is restricted under the ABM Treaty is “a system to counter strategic ballistic missiles or their elements in flight trajectory.” Therefore, interceptor missiles that do not fall under this category, namely, land-, sea- and air-based interceptor missiles that intercept tactical and theater ballistic missiles are not subjects of regulations under the ABM Treaty. However, the ABM Treaty has not clearly defined interceptor missiles that intercept “strategic” ballistic missiles and those that intercept other ballistic missiles, and there is no clear distinction between the two.

Since November 1993, the United States, Russia and three additional countries that were scheduled to become party to the ABM Treaty (Belarus, Kazakhstan and Ukraine) have been discussing off and on the establishment of a definition of the interceptor missile that is permissible under the ABM Treaty. As a result, these countries reached in March 1997 an agreement on the definition of interceptor missiles that can be deployed for use in the TMD system, and they signed in September the same year a set of agreed statements relating to the ABM Treaty. The United States has thus succeeded in paving the way for the development and deployment of the TMD system. However, concerns Russia had entertained in the course of negotiations about advanced U.S. TMD system lingered, and prospects for an early ratification of the agreed statements by the Duma remain clouded.

The set of agreed statements, which defines the interceptor missiles that can be used in the TMD system, consists of two agreed statements. The First Agreed Statement regulates TMD systems having interceptor missiles whose velocity does not exceed 3 kilometers per second over any part of its flight trajectory, and the Second Agreed Statement regulates TMD systems having interceptor missiles whose velocity is faster than 3 kilometers per second over any part of its flight trajectory. The interceptor missiles for

use in the TMD system had to be divided into two categories on account of the firm insistence of Russia on restricting their velocity to 3 kilometers per second or less.

However, it was agreed to regulate the TMD system not on the basis of the capability of interceptor missiles but on the basis of ballistic target-missiles. The First Agreed Statement, which regulates interceptor missiles with a velocity not exceeding 3 kilometers per second, and the Second Agreed Statement, which regulates interceptor missiles with a velocity exceeding 3 kilometers per second, consider them as interceptor missiles for use in the TMD system as long as they are not used for test-intercepting ballistic missiles with a range exceeding 3,500 kilometers or ballistic missiles with a velocity exceeding 5 kilometers per second over any part of their flight trajectory and exempt them from regulations of the ABM Treaty (Table 2-2).

In other words, even interceptor missiles with a velocity exceeding 3 kilometers per second over any part of their flight trajectory can be deployed for use in the TMD system as long as they are not used for test-intercepting a ballistic missile with a range exceeding 3,500 kilometers or with a velocity exceeding 5 kilometers per second over any part of its flight trajectory. However, these five countries, including the United States and Russia, have agreed not to develop, test and deploy space-based interceptor missiles or other space-based components based on other physical principles (such as laser). And each of these five countries attached to the agreed statements a unilateral statement saying that they do not have at that point of time any plan for developing land- and air-based TMD systems equipped with interceptor missiles with a velocity exceeding 5.5 kilometers per second over any part of their flight trajectory, or sea-based TMD systems equipped with interceptor missiles with a velocity exceeding 4.5 kilometers per second.

During the talks, Russia strongly demanded restrictions to the geographical area of deployment and the number to be deployed of

Table 2-2. The Outline of the First and Second Agreed Statements Relating to the ABM Treaty, and Unilateral Statements**The First Agreed Statement**

A low-velocity TMD system (with interceptor missiles whose velocity does not exceed 3 km/sec over any part of their flight trajectory) is not, as long as it is not tested against a ballistic target-missile with a velocity exceeding 5 km/sec or with a range exceeding 3,500km, subject to regulations of the ABM Treaty.

The Second Agreed Statement

- (1) Confirmation of the U.S.-Russian agreement reached in May 1995
 - (a) The parties are committed to the ABM Treaty as a cornerstone of strategic stability.
 - (b) Development and deployment of TMD systems are possible, but it should not lead to violation or circumvention of the ABM Treaty.
 - (c) TMD systems that do not pose a realistic threat to strategic nuclear force of another party to the ABM Treaty may be deployed.
 - (d) TMD systems will not be deployed by the parties for use against each other.
 - (e) The scale of deployment of TMD systems in quantity and geographic scope will be consistent with non-strategic missile programs confronting the party.
- (2) A high-velocity TMD system (with interceptor missiles whose velocity exceeds 3km/sec over any part of their flight trajectory) is not, as long as it is not tested against a ballistic target-missile with a velocity exceeding 5 km/sec or with a range exceeding 3,500 km, subject to regulations of the ABM Treaty.
- (3) Each party undertakes not to develop, test or deploy space-based interceptor missiles to counter non-strategic missiles or space-based components based on other physical principles. (Space-based sensors for use in the TMD can be deployed).

Unilateral Statements

The United States, Belarus, Kazakhstan, Russia and Ukraine announce the following:

- (1) They do not have any plan for developing land- or air-based TMD systems that have interceptor missiles with a velocity exceeding 5.5 km/sec or sea-based systems that have interceptor missiles with a velocity exceeding 4.5 km/sec.
- (2) They do not have any plan for test-intercepting MIRVed ballistic missiles or re-entry vehicles of strategic missiles.

Source: Data from the U.S. Department of State Web site.

Note: Signed by the United States, Russia, Ukraine, Belarus and Kazakhstan on September 26, 1997.

interceptor missiles with a velocity exceeding 3 kilometers per second, but the United States rejected it. In fact, considering that tactical and theater ballistic missiles have proliferated and that it is difficult to identify sources of threat, it was unacceptable for the United States to be imposed restrictions on the area of deployment

and the number of interceptor missiles deployed. Russia, in addition to the restrictions on the velocity of interceptor missiles, proposed the banning of space-based interceptors and early warning systems such as space-borne sensors. However, Russia's demand was rejected by the United States except for spaced-based interceptor missiles. Russia was afraid that the United States might research into, and develop, an interceptor missile system in the name of TMD and use the findings of such activities to build a national missile defense (NMD) system with the result that Russia's nuclear deterrent against the United States might be weakened, but no concrete measure was taken to allay such Russian concerns.

In the end, the United States sought to allay the fears by inserting in the Second Agreed Statement remarks to the effect (1) that the TMD system should not pose a realistic threat to the strategic nuclear force of another party to the Agreed Statement, (2) that the TMD system will not be deployed by the parties for use against each other, and that (3) the scale of deployment of the TMD system in quantity and geographical scope will be consistent with the scope of non-strategic missile programs confronting the party. Yevgeniy Primakov, then foreign minister of Russia, noted in September 1997 that the agreements only reflect the status quo, and it was the background outlined above that prompted him to make such remarks. The entry into force of the First and the Second Agreed Statements has to await ratification by the parliaments of both countries and other signatories, and whether the Russian State Duma will ratify them as they are is not altogether clear.

China, which has a limited number of nuclear weapons and ballistic missiles, has been opposing the development of the BMD system for fear that it will compromise its nuclear deterrent power. China appears to be conscious not only of the BMD system of the United States but of that of Russia. Under the agreements mentioned earlier, Russia is free to test-intercept a ballistic missile with a range of 3,500 kilometers or less and a velocity of 5 kilome-

ters per second or less. If the Russian economy recovers and Russia undertakes to develop and deploy a BMD system that has such capability, China's deterrent power against Russia based on Dong Feng-3 (CSS-2), which has a range of about 2,800 kilometers, will be seriously compromised. In addition, China entertains fears, as with Russia, that the United States might divert the findings of research and development of TMD interceptor missiles to use in its NMD system. Besides, China is strongly opposed to a TMD system Taiwan plans to develop. Although Taiwan claims that it will conduct research and development of a TMD system on its own, China thinks that the United States will inevitably be involved technologically in Taiwan's development program. Therefore, China strongly opposes the TMD program of Taiwan on the grounds that it infringes on its sovereignty over Taiwan.

4. Japan's Policies on Nuclear Disarmament and BMD

(1) Efforts on Nuclear Disarmament

Japan, the only country in the world that was attacked with atomic bombs, has been tackling the problem of nuclear disarmament in earnest. The basic approach of the Japanese government on nuclear disarmament is the ultimate elimination of nuclear weapons by taking practical steps by stages. For those who advocate an early elimination of nuclear weapons, the approach taken by the Japanese government may be less than satisfactory. However, the gradualist approach that aims at achieving nuclear disarmament by taking practical steps is favored not only by non-nuclear weapon states but also by nuclear weapon states. For instance, a draft resolution on "Nuclear Disarmament with a View to the Ultimate Elimination of Nuclear Weapons" that Japan introduced before the U.N. General Assembly in 1998 was approved by an overwhelming 160 countries, including the five nuclear weapon states with no objection and one abstention.

Soon after India and Pakistan conducted nuclear tests in May 1998, the government of Prime Minister Ryutaro Hashimoto expressed its intention to hold an international forum with a view to discussing ways to strengthen the nuclear non-proliferation regime and accelerate nuclear disarmament on a worldwide scale. Its efforts culminated in the Tokyo Forum for Nuclear Non-Proliferation and Disarmament held in August 1998 under the auspices of the Japan Institute of International Affairs and the Hiroshima Peace Institute with the participation of about 20 specialists from 16 countries. After meeting four times thereafter, the Tokyo Forum published its final report in July 1999.

The report offered 17 key recommendations. Among other things, it included measures that need to be urgently implemented, such as temporarily removing all nuclear weapons from alert for the period of concern to avoid the risk of the millennium computer bug leading to an accidental launch. It contained recommendations that are practicable under the existing conditions, including: the establishment of a permanent secretariat to strengthen the NPT regime; a measure to restrict the exercise of the vetoes by the five permanent member countries of the U.N. Security Council against efforts to curtail the proliferation of weapons of mass destruction (WMD); international cooperation for tightening the control of nuclear fissile materials by the republics of the former Soviet Union; and measures to improve the transparency of nuclear weapons and weapons-grade nuclear materials of nuclear weapon states.

Worthy of special mention is the fact that the report not only took up the nuclear weapons problem but adopted a comprehensive approach that also addressed the problems of biological and chemical weapons, and the ballistic missile problem. Considering the fact that the problem of nuclear weapons is inseparably connected with other WMD and ballistic missiles, it must be noted that the comprehensive approach to arms control and disarmament has played a role in suggesting a guideline for promoting nuclear arms reduction.

Japan has played a leadership role in the field of nuclear disarmament and non-proliferation by serving as chair of the Conference on Facilitating the Entry into Force of the CTBT, held in Vienna in October 1999, and has pushed for the adoption of “the Final Declaration” to facilitate an early entry into force of the CTBT. The final declaration stated that the Conference had agreed to have the ratifying states select one of their number to promote cooperation to facilitate the early entry into force of the CTBT. It is said that Japan, which had served as chair of the Conference, is likely to be elected as the one. Since the U.S. Senate refused to ratify the CTBT, prospects for an early entry into force of the treaty have receded. Now that as many as 154 countries have signed the treaty, however, Japan is increasingly called upon to work toward early entry into force of the treaty, by helping to build the verification regime at an early date, for instance, through the exploitation of Japan's advanced seismic detection technology, which could improve the verification technology. Japan is also expected to work to convince the key countries — countries whose ratification is essential for the CTBT to enter into force — to complete the process.

(2) Approach to BMD

In December 1998, the Japanese government decided to launch a BMD technology research project jointly with the United States. The object of the joint research is Navy Theater Wide Missile Defense (NTWD). The choice of the NTWD may perhaps be explained by the fact that compared with the Theater High Altitude Area Defense (THAAD), there is more room for research and development of technology.

Details of the work to be done under the NTWD joint technology research are summed up in the memorandum of understanding signed by the Defense Agency of Japan and the U.S. Defense Department in August 1999. The memorandum prescribes the two countries to jointly conduct requirements analysis, design and trial production of certain parts and components. More specifically, they

are the design of four components of interceptor missiles — infrared homing device, kinetic warhead, second-stage propulsion and nose cone — and trial production of infrared homing device.

Before and after the Japanese government had decided to launch the joint BMD technology research with the United States, criticism of the project by Chinese official figures has become increasingly vocal. The Chinese criticism may be summarized into two points: the establishment of a BMD system by Japan would spark an arms race to deteriorate the strategic environment of East Asia and it portends Japan's rise into a military giant. However, neither of these criticisms has sufficient persuasiveness in strategic context. It is to be noted that Japan has neither ballistic missiles nor WMD to be mounted on such missiles. If the BMD system covers a country that possess ballistic missiles, it may reinforce its capability to launch an attack. However, a BMD system defending a country like Japan, which does not have ballistic missiles equipped with WMD including nuclear weapons, is purely a defensive weapon and is least likely to destabilize the strategic relations with neighboring countries. Furthermore, Japan's BMD system is not targeted at ballistic missiles of any particular country. It is a passive defense weapon and is militarily neutral unless and until Japan is faced with a threat of a missile attack. In short, the criticism of China that Japan's BMD system will worsen the strategic environment is nothing more than the expression of its fear that the one-sided military superiority China has achieved by deploying ballistic missiles may be challenged by Japan's BMD system.

One might add that China has not only been deploying and strengthening its ballistic missiles but it had exported ballistic missiles and related materials in the past, and the suspicion about the exports of such missile-related materials has not been dispelled as yet. The very fact that such a country criticizes a country like Japan, which does not have ballistic missiles, for conducting research into BMD is misguided and unacceptable.

However, as mentioned earlier, China's criticism of the TMD sys-

tem was not directed at Japan alone. Implicit in it was criticism leveled at the United States and Russia for undermining its deterrent power against these countries. Therefore, even if China acquiesced over a BMD system covering Japan, it will not soften its criticism of NTWD as long as the latter carries strategic significance beyond the defense of Japan. The same is true of Russia. Therefore, the Japan-U.S. joint technology research relating to NTWD could conceivably be affected by U.S.-Russian and U.S.-Chinese dealings and bargains involving TMD.