



The Heritage Foundation Backgrounder

Executive Summary

No. 1268

April 7, 1999

CHINA INCREASES ITS MISSILE FORCES WHILE OPPOSING U.S. MISSILE DEFENSE

RICHARD D. FISHER, JR.

Revelations that China stole U.S. nuclear warhead secrets highlight two strategic challenges to the United States. New, small nuclear warheads—developed with the help of U.S. warhead information—will allow China to put multiple warheads on new intercontinental ballistic missiles (ICBMs) or equip short-range missiles with nuclear warheads. In Asia, China already has increased to over 100 the number of missiles pointed at Taiwan, and future theater ballistic and cruise missiles could threaten U.S. forces in Asia and U.S. allies.

Second, China's vigorous campaign to block U.S.–Japan missile defense cooperation and future U.S. sales of missile defense equipment to Taiwan seeks to preserve a growing advantage in missile forces while putting great pressure on U.S. allies in Asia in the hope that this will weaken their alliances with the United States. If the United States and its allies were not to cooperate in missile defenses, this would undermine allied confidence in U.S. defense commitments and force Asian states to consider building their own missiles to deter China.

MISSILES ARE A KEY FUTURE WEAPON

China's People's Liberation Army (PLA) hopes that by developing a range of nuclear and non-nuclear missiles, it can deter American support for Taiwan and project military power in Asia. For China, missiles are a weapon system that it can produce; it has much difficulty in producing modern combat aircraft and warships. Missiles also address a military weakness of the United States and its allies: lack of effective missile defense systems. New, more accurate missiles also allow China to seek greater political leverage in Asia. China will likely use the threat of its new missile forces to coerce political concessions, especially from Taiwan.

In the next several years, China can be expected to field a new mobile intercontinental ballistic missile, more accurate medium- and short-range ballistic missiles, and a new land-attack cruise

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missile. These will be supported by new reconnaissance, intelligence, and navigation satellites. China's goal is to create a "reconnaissance-strike complex" that marries space and airborne sensors to provide precise targeting data to highly accurate ballistic and cruise missiles. Besides making greater use of outer space for military purposes, China also seeks to develop the means to destroy opposing satellites and may also be developing its own missile defenses.

CHINA OPPOSES U.S. MISSILE DEFENSE

China hopes to create the impression that American *defensive* missiles, not China's new offensive missiles, threaten peace in Asia. But it can be expected that China will only increase its missile forces in response to U.S. missile defense plans. The Clinton Administration is not responding adequately to China's threats and is not sufficiently affirming the need for U.S. missile defenses. China's attack against U.S. missile defense plans must be seen as an attempt to limit the future scope of U.S. alliances in Asia. This is unacceptable for the United States, as its alliances are a vital element of its national security in Asia.

To prevent the U.S.–China relationship from lapsing into a Cold War–like confrontation, America must demonstrate resolve and leadership in responding to the challenge of China's growing missile forces and its anti-missile defense campaign. The United States should:

- **State that China's missiles threaten peace in Asia.** The Clinton Administration should offer a full assessment of China's future missile development plans to Congress and the American people. The Administration should note clearly that it is China's missiles, not U.S. missile defenses, which threaten peace in Asia.
- **Deploy national missile defenses.** To defend Americans from future Chinese missiles and to strengthen allied confidence in U.S. missile defense technology, the United States should rapidly deploy a national missile defense system based on the U.S. Navy's Theater-Wide missile defense system. A companion space-based sensor system should follow in the future.
- **Use theater missile defenses to strengthen U.S. alliances in Asia.** The United States should rapidly develop and deploy effective theater missile defenses in Asia. Missile defense cooperation should be a major new mission for U.S. forces in cooperation with Australia, the Philippines, Japan, and South Korea. Such cooperation is needed to protect U.S. forces in Asia, as well as allied forces, from growing Chinese and North Korean missile forces.
- **Sell theater missile defenses to Taiwan.** China's increased deployment of missiles near Taiwan requires that the United States sell Taiwan missile defense systems. Such sales are consistent with the goals of the 1979 Taiwan Relations Act and with the U.S. goal that future Taiwan–China relations be determined by peaceful means.
- **Suspend commercial space cooperation with China pending missile control negotiations.** The United States should suspend civil space cooperation with China pending the completion of agreements with China that set limits on future missile competition. China's missile forces have benefited from commercial space cooperation with the United States. Such cooperation is not in America's interest as long as China's modernized missile forces can threaten Americans.

China's growing missile forces and its campaign to block the development and deployment of U.S. missile defenses pose a serious challenge to U.S.–China relations and to stability in Asia. Prevention of a future crisis with China requires that America be firm and resolute in responding to future Chinese threats. Missile defenses in Asia can help to persuade China that missile competition with the United States cannot succeed, and that China must instead refrain from threatening the United States and its Asian neighbors.

—Richard D. Fisher, Jr., is Director of The Asian Studies Center at The Heritage Foundation.



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Revelations that China stole U.S. nuclear warhead secrets highlight two strategic challenges to the United States. First, China is building a range of new ballistic and cruise missiles. New, small nuclear warheads—developed with the help of the stolen information and other U.S. data—will allow China to place multiple warheads on new intercontinental ballistic missiles (ICBMs) or equip short-range missiles with nuclear warheads. China has increased to over 100 the number of missiles pointed at Taiwan, and future theater ballistic and cruise missiles could threaten U.S. forces and allies in Asia. Second, China is seeking to weaken U.S. alliances by waging a loud and menacing campaign to prevent the U.S. deployment of missile defenses in Asia that can guard against the growing North Korean and Chinese missile forces.

China's People's Liberation Army (PLA) has long viewed missile forces as a principal component of its future warfare plans. By developing a variety of nuclear and non-nuclear missiles, the PLA hopes to deter American support for Taiwan and project power in Asia. In the next several years, China can be expected to field a new mobile intercontinental ballistic missile, more accurate medium- and short-range ballistic missiles, a new land-attack cruise missile, and new reconnaissance and intelligence satellites that will support missile opera-

tions. Along with plans to make greater use of outer space for military purposes, China is seeking to develop the means to destroy opposing satellites and may also be developing its own missile defenses.

But China's interest in missile defenses has not stopped it from mounting a major diplomatic campaign of threats this year to block the U.S. deployment of missile defenses in Asia. China hopes to create the impression that American *defensive* missiles, not China's new offensive missiles, threaten peace in Asia. The Clinton Administration is not responding adequately to China's threats and is not sufficiently affirming the need for U.S. missile defenses. It is essential that the United States quickly develop and deploy adequate missile defense systems, lest uneasy U.S. friends and allies turn to their own missile—or even nuclear—options to deter China. The

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Administration should state clearly that China's new missiles threaten peace in Asia, accelerate the development of effective missile defense systems to protect U.S. forces in Asia from both increasing Chinese and North Korean missile forces, and develop and share theater missile defense systems with Japan, South Korea, Taiwan, and Australia. The Administration also should suspend civilian space cooperation with China until it enters into agreements with the United States that limit future missile competition.

FOR CHINA, MISSILES ARE A KEY FUTURE WEAPON

The importance of missiles to China's future military posture is emphasized dramatically by recent revelations that China obtained critical information on the U.S. W-88 nuclear warhead that allowed it to develop a similar small nuclear warhead. In China's developing strategy and doctrine, missiles hold a place of priority that is perhaps above that of air or naval forces. PLA missile-related doctrine is evolving from one that stresses the use of nuclear missiles to deter other nuclear powers to one that envisions a range of uses for nuclear and non-nuclear armed missiles at the regional level.¹ Most ballistic missiles are now controlled by a special service within the PLA called the Second Artillery. As China builds new short-range ballistic missiles and cruise missiles, its Army, Navy, and Air Force likely will be given more missile-based strike missions as well. China's emphasis on missiles is due also to a practical reality: China by itself cannot build a modern air force and navy, but it can build a variety of modern missiles.²

Asymmetric Warfare

In addition to compensating for PLA weaknesses, missiles allow the PLA to exploit deficiencies in the military forces of the United States and other possible Asian adversaries which have no effective defenses against theater or tactical missiles or against supersonic anti-ship missiles. Missiles also are essential to a high-priority PLA goal: to build the forces needed to wage modern information warfare. Like the United States, China recognizes the vital importance to future warfare of gaining information dominance. China intends to use missiles to launch reconnaissance and communication satellites. China may also use missiles to attack satellites or terrestrial-based command, communication, computer, control and intelligence (C4I) systems.³

Importance of Foreign Technology

The high priority that the PLA and the political leadership in China place on missile force modernization is reflected in China's determination to obtain foreign missile technology, whether by cooperation, sale, or subterfuge. Indeed, China's aerospace sector and its missile and space programs receive greater political support and resources than aircraft programs. But despite the progress China has made on its own to develop modern missiles, it still requires foreign technology inputs to keep pace with the United States. Some of China's sources for missile technology include:

- The United States. Stolen W-88 small nuclear warhead data; stolen neutron bomb data; possible Tomahawk cruise missiles obtained via

1. For a discussion of China's evolving missile doctrine, see Richard D. Fisher, Jr., "China's Missiles Over the Taiwan Strait: A Political and Military Assessment," in James R. Lilley and Chuck Downs, eds., *Crisis in the Taiwan Strait* (Washington, D.C.: National Defense University Press, 1997), pp. 183-187. For an excellent review of relatively recent Chinese literature on evolving missile doctrine, see Alistair I. Johnston, "China's New 'Old Thinking,'" *International Security*, Winter 1995-1996.
2. While investing heavily in modernizing its Air Force and Navy, China has been forced to obtain technology from such countries as Russia and Israel to aid its efforts. See Richard D. Fisher, Jr., "How America's Friends Are Building China's Military," Heritage Foundation *Background* No. 1146, November 5, 1997.
3. PLA emphasis on developing information warfare capabilities is emphasized in a 1998 Department of Defense report to Congress, *Future Military Capabilities and Strategy of the People's Republic of China*, Report to Congress Pursuant to Section 1226 of the Fiscal Year 1998 National Defense Authorization Act, pp. 5-9.

Afghanistan;⁴ use of U.S. Global Positioning Satellite (GPS) navigation signals;⁵ information derived from commercial cooperation that is critical to improving the reliability of space launch vehicles;⁶ and subsidy for future missile programs from U.S. purchase of Chinese satellite launch services. The father of China's missile program, Dr. Tsien Hsue-shen, was an important early U.S. rocket expert; he returned to China in 1955 following alleged McCarthy-period persecution. Since the 1980s, many younger Chinese aerospace engineers have studied at U.S. universities.

- Russia. Has marketed the Raduga Kh-65SE and Novator Alpha cruise missiles to China; has sold China the Raduga SS-N-22 Sunburn supersonic anti-ship missile, co-production rights for the Zvezda Kh-31 supersonic anti-radiation missile, and data on large military lasers; very likely has sold China data from the VEGA-M bureau on radar satellites; and sold the S-300PMU surface-to-air missile that is helping China develop future anti-missile systems. From Belarus, China has obtained a MAZ missile transporter used for a Soviet missile that can help China make mobile its new ICBMs.⁷
- Israel. Possible co-development with China of a land-attack cruise missile;⁸ sale to China of its Phalcon airborne radar that could help guide Chinese anti-ship missiles; alleged sale of U.S. Patriot missile to China which may be assisting future Chinese anti-missile programs.⁹
- Germany, Britain. Germany's DASA aerospace company has helped China develop communication satellites; Britain's University of Surrey is helping China develop small satellites, which are more difficult to detect and less expensive to produce and launch.
- Kiribati, France, Brazil. Kiribati has allowed China to establish a satellite tracking station on its island of Tarawa;¹⁰ France and Brazil may soon begin space-tracking cooperation with China.¹¹

CHINA'S MISSILE FORCE MODERNIZATION

A 1997 U.S. Department of Defense report to Congress notes that China has the potential to build "as many as a thousand" new ballistic missiles over the next decade.¹² China is developing new ballistic, cruise, and anti-missile systems, and is investing heavily in advanced guidance systems

4. John Barry and Gregory L. Vistica, "The Penetration Is Total," *Newsweek*, March 29, 1999, p. 30.
5. Walter Pincus, "U.S. Navigation Satellites Help China, Pentagon Says," *The Washington Post*, June 20, 1998, p. A2.
6. For a review of the ways in which U.S. commercial space cooperation has helped to improve China's missiles and the ways in which the PLA may have access to commercial communication satellites sold to China, see Richard D. Fisher, Jr., "Commercial Space Cooperation Should Not Harm National Security," Heritage Foundation *Backgrounder* No. 1198, June 26, 1998.
7. Bill Gertz, "Missile-Related Technology Sold to Beijing by Belarus," *The Washington Times*, June 12, 1997, p. A9.
8. Trevor Nash, "Stand-off and Deliver," *Armada International*, August/September 1996, p. 56. The Delilah was built originally as an anti-radar cruise missile and was derived from the U.S. Chukar target drone.
9. David A. Fulghum, "China Exploiting U.S. Patriot Secrets," *Aviation Week and Space Technology*, January 18, 1993, p. 20, and "Defense Department Confirms Patriot Technology Diverted," *Aviation Week and Space Technology*, February 1, 1993, p. 26. Israel strongly denied the charge in the wake of these reports.
10. Liu Cheng, "China: Tarawa Station Added to China Aerospace's Tracking/Control Network," *Keiji Ribao* (Science and Technology Daily), October 7, 1997, p. 1, in FBIS-CHI-98-068.
11. "China and France to Pool Satellite Control Network," Agence France-Presse, February 10, 1999.
12. U.S. Department of Defense, *Selected Military Capabilities of the People's Republic of China*, Report to Congress Pursuant to Section 1305 of the Fiscal Year 1997 National Defense Authorization Act, p. 4.

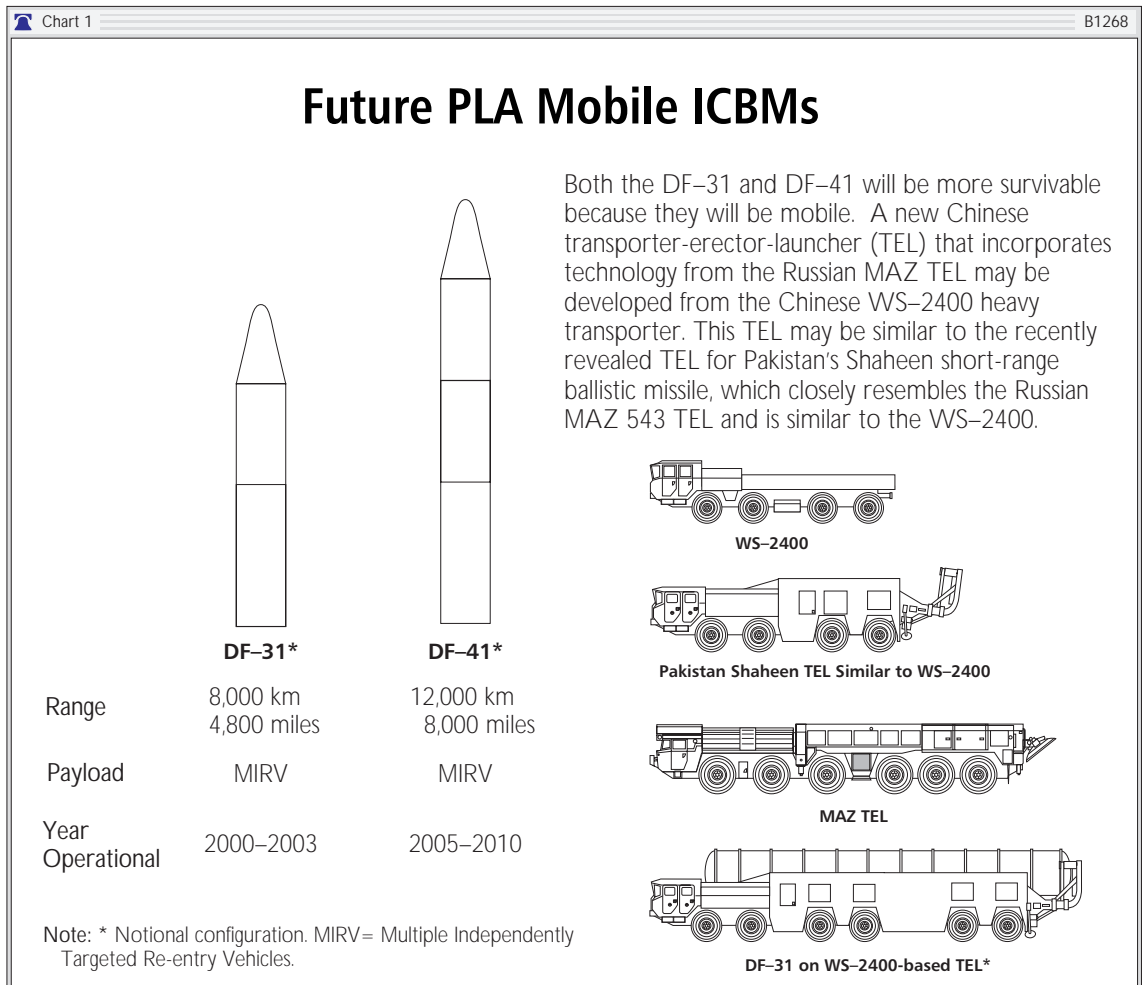
and satellites to improve missile accuracy. Where possible, foreign technology is being sought to improve China's future missile development. Increasingly, Chinese missile forces will be equipped with highly destructive non-nuclear warheads.

New Long-Range Ballistic Missiles

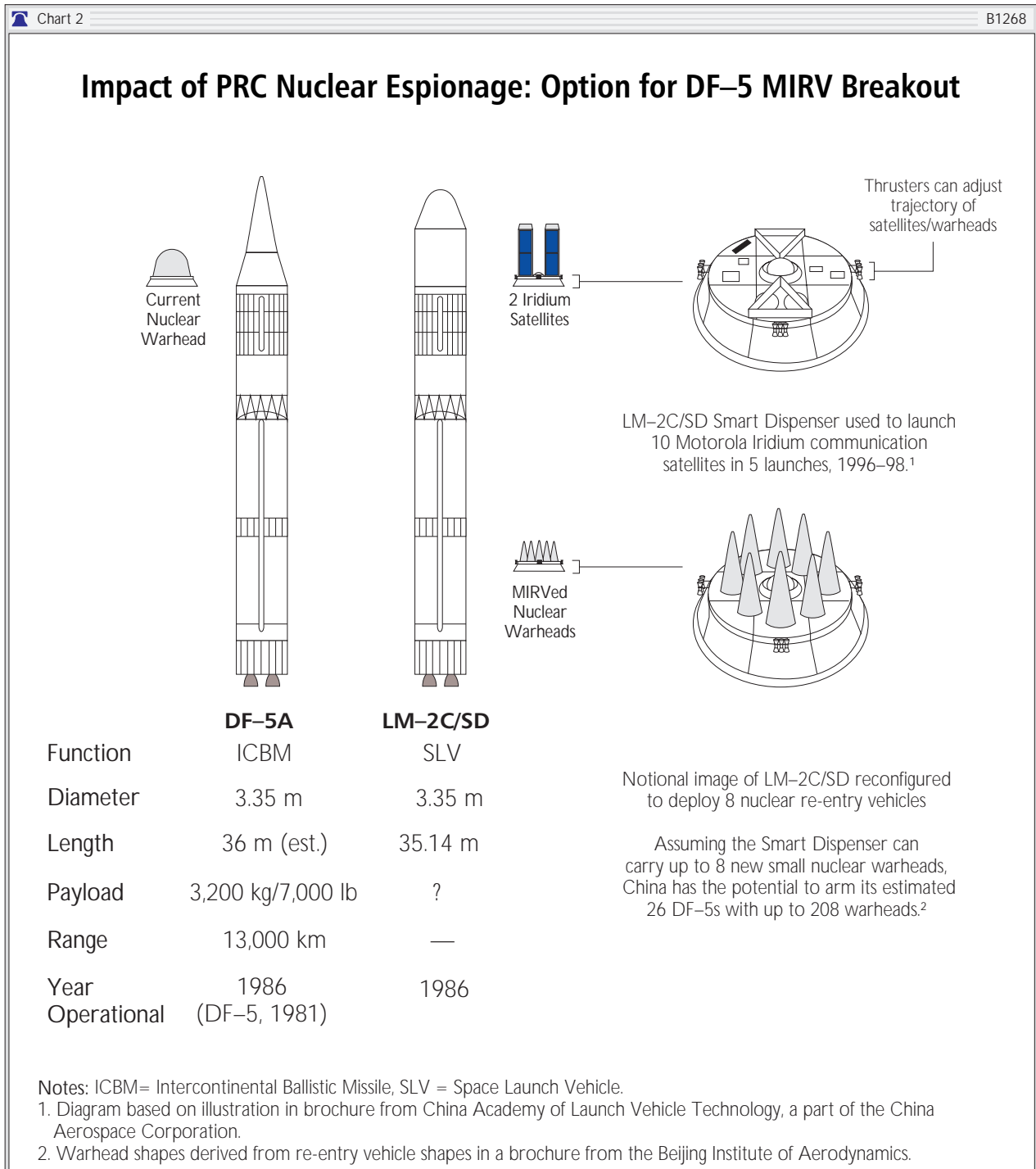
The PLA has two ICBM development programs and one submarine-launched ballistic missile program that may result in new deployed missiles by 2010. The most advanced, the solid-fueled 5,000-mile-range DF-31 ICBM, which has enough range to hit the western United States, may enter service in the next few years. In late 1998, the DF-31 was reported to be ready for an ejection test from its launch tube.¹³ This missile will form the basis for China's next submarine-launched missile, the JL-2. By the end of the next decade,

China is expected to field the 8,000-mile-range DF-41 solid-fueled ICBM. Both it and the DF-31 will be mobile. China's new transporter-erector-launcher (TEL), based on a new WS-2400 heavy transport vehicle revealed at the 1998 Zhuhai Air Show,¹⁴ shows influences from the Russian MAZ TEL sold to China.¹⁵ A better TEL, likely operating from a network of mountainside caves, would enhance the survivability of these mobile ICBMs.

Both the DF-31 and DF-41 ICBMs are expected to incorporate multiple independently targeted re-



13. Bill Gertz, "China Prepared to Test ICBM with Enough Range to Hit U.S.," *The Washington Times*, November 12, 1998, p. A1.
 14. The second Zhuhai Air Show was held from November 15 to 22, 1998, at the Zhuhai International Airport near Macao. These shows in 1996 and 1998 were China's most extensive exposition of its aerospace sector.
 15. A picture of the WS-2400 can be seen on The Heritage Foundation Asian Studies Center Web page report, in a on the Zhuhai Air Show. See <http://www.heritage.org/exclusive/zhuhai/>.



entry vehicle (MIRV) warheads. For many years, China has been suspected of trying to develop MIRV warheads; in early 1998, U.S. Air Force General Eugene Habinger stated publicly that China was developing MIRVs for its ICBMs.¹⁶ As a

result of an investigation conducted by a congressional panel led by Representative Christopher Cox (R-CA), it was revealed in early 1999 that in the mid-1980s, China had obtained secret data from the Los Alamos National Laboratory concern-

16. Bill Gertz, "China's Nukes Could Reach Most of U.S.; Russians Also Beefing Up Missiles, Top General Says," *The Washington Times*, April 1, 1998, p. A1.

ing the U.S. W-88 nuclear warhead.¹⁷ The W-88 is the smallest and most modern U.S. nuclear warhead and is mounted on the U.S. Navy Trident D-5 submarine-launched ballistic missile.¹⁸

On March 14, National Security Advisor Samuel Berger stated “there’s no question” that China benefited from nuclear warhead secrets leaked from the Los Alamos labs.¹⁹ One source notes that U.S. W-88 information could have saved China “two to ten years” of effort.²⁰ Possible evidence that China is developing new smaller re-entry vehicles to carry its new smaller nuclear weapon was gathered by the author at the 1998 Zhuhai Air Show.²¹

The Multiple-Warhead Option. China has suggested that it may respond to a U.S. National Missile Defense (NMD) by increasing the number of missiles or warheads that it could aim at the United States. The addition of smaller nuclear warheads to its arsenal also gives China the option to modify its existing 8,000-mile-range DF-5 ICBMs with multiple warheads as another means of responding to NMD. The DF-5 currently has only

one large warhead that is not very accurate. A “bus” that China developed to launch multiple U.S. Motorola “Iridium” communication satellites could quickly be converted to carry up to eight small nuclear warheads.²² The Chinese Long March CZ-2C/SC space-launcher used to loft ten Iridium satellites to date is a slightly modified version of the DF-5 ICBM. According to press reports, U.S. intelligence services estimate China may have 18 to 26 DF-5 ICBMs.²³ Modifying these DF-5s with an eight-warhead MIRV bus increases the number of nuclear weapons carried by its DF-5s from 26 to 208.

Better Medium- and Short-Range Ballistic Missiles

To achieve its regional objectives, China puts great emphasis on its medium- and short-range missile forces. China is improving the 1,125-mile-range DF-21 ballistic missile that entered service in the late 1980s. China’s armed forces may have more than 80 of these solid-fueled missiles, which are both road- and rail-mobile.²⁴ *Jane’s Defence*

17. The Cox Commission, formally called the Select Committee on U.S. National Security and Military/Commercial Concerns with the People’s Republic of China, was created in June 1998 to investigate the leakage of U.S. missile technology to China and focused on this incident. The espionage was first reported in Carla Ann Robins, “China Got Secret Data on U.S. Warhead,” *The Wall Street Journal*, January 7, 1999, p. A3.

18. For a full report of the struggle of Department of Energy officials to convince the Clinton Administration to take corrective action to find who betrayed the technology and to increase security measures, see James Risen and Jeff Gerth, “China Stole Nuclear Secrets from Los Alamos, U.S. Officials Say,” *The New York Times*, March 6, 1999, p. A1.

19. David E. Sanger, “No Question’ U.S. Says, Leak Helped China,” *The New York Times*, March 15, 1999, p. A8.

20. Robins, “China Got Secret Data on U.S. Warhead.”

21. A brochure from the Beijing Institute of Aerodynamics obtained by the author shows wind tunnel test models and infrared thermodynamic pictures of shapes that are very likely to be nuclear re-entry vehicles. Assuming China’s new nuclear re-entry vehicle weighs about the same as a W-88 (about 800 lbs.), this would allow a DF-5 to carry up to eight warheads. Photos can be seen on The Heritage Foundation Asian Studies Center Web page report on the Zhuhai Air Show, *op. cit.*

22. Both U.S. government and defense industry sources have told The Heritage Foundation that the Iridium launch bus could be reconfigured to launch nuclear warheads.

23. China has made no official statement on the size of its ICBM force. The estimate of 18 DF-5s comes from a leaked assessment by the U.S. Central Intelligence Agency. See Bill Gertz, “China Targets Nukes at U.S.,” *The Washington Times*, June 3, 1998, p. A1. In 1998, China reportedly added eight new DF-5s. Bill Gertz, “China Adds 6 ICBMs to Arsenal,” *The Washington Times*, July 21, 1999, p. A1. This small number is viewed as confirming the “retaliatory” role of the Second Artillery Corps. Based on estimated production rates, others estimate China has produced 120 to 150 DF-5s. See Yang Zheng, “China’s Nuclear Arsenal,” National University of Singapore, March 16, 1996, at <http://www.kimsoft.com/korea/ch-war.htm>. Although this analysis is highly speculative and far exceeds “conventional” wisdom, a U.S. source told this author that the latter estimate is plausible. See also “New Information on the Size of China’s Missile Force,” Center for Defense and International Security Studies Web site, at <http://www.cdiss.org>.

Weekly, citing Japanese military sources, reports that China recently fielded an advanced version of the DF-21, known as the DF-21X.²⁵ This new DF-21 may have a new highly accurate warhead that uses navigation satellite data like the U.S. GPS network or radar guidance technology.²⁶ If this new warhead used radar guidance in a manner similar to the U.S. Pershing II, which correlates images from the missile's radar with digital map pictures in the warhead's computer, it could achieve an accuracy within a radius of 50 meters.²⁷ This level of accuracy would mean the difference in capability between hitting an airfield or hitting a particular hangar on the airfield. The new DF-21 variant is expected also to have a longer range, perhaps up to 1,800 miles.²⁸

Short-Range Ballistic Missiles (SRBMs). Especially for missions near Taiwan, China intends to rely heavily on short-range ballistic missiles to overcome the technical superiority of Taiwan's air force. U.S. intelligence estimates that China could deploy up to 650 of the 360-mile-range DF-15 and 180-mile-range M-11 short-range ballistic missiles to areas near Taiwan. The DF-15 is a sophisticated missile that uses warhead shaping to make radar detection more difficult and a second

stage to confuse anti-missile radar. But it may soon get better. At the 1996 Zhuhai show, the author was told that satellite navigation technology was being used to improve the accuracy of the short-range DF-15 missile. This solid-fueled missile is both road- and rail-mobile. One Chinese article says that an enhanced guidance system under investigation "can raise impact accuracy by an order of magnitude."²⁹ For the DF-15, this could mean improved accuracy from a 300-meter radius to a 30-meter radius. Similar guidance upgrades could also be used to improve the M-11, which sources in Taiwan believe will go to Army units, whereas the DF-15 is controlled by the Second Artillery.

New Cruise Missiles

As seen in the case of short-range ballistic missiles, the Second Artillery and other PLA services are likely to have their own land-attack cruise missiles now in development. The Pentagon has noted that land-attack cruise missiles for theater and strategic missions are a "relatively high development priority" for China and that initial versions "should be ready early in the next century."³⁰ China has been investigating combined GPS/Iner-

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24. "Army General Comments on PRC Simulated Missile Exercise," *Tzu-Li Wan-Pao*, January 27, 1999, p. 2, in FBIS-CHI-99-027.
25. Paul Beaver, "China Prepares to Field New Missile," *Jane's Defence Weekly*, February 24, 1999, p. 3. GPS and its Russian counterpart, GLONASS, each use about 24 satellites to provide signals correlated from several satellites to produce an accurate determination of location. Although the GPS signal is downgraded for civil users, by using differential processing technology from a larger number of satellites, civil GPS signals can produce location information sufficient for precision missile strike missions. There is some indication that China is interested in utilizing Differential GPS for military purposes.
26. That China was working on a new, possibly terminally guided, warhead for the DF-21 was first revealed to this author at the 1996 Zhuhai Air Show by an engineer from the Beijing Research Institute for Telemetry, which develops advanced guidance systems. See Richard D. Fisher, Jr., "China's Missile Threat," *The Wall Street Journal*, December 30, 1996, p. A8. Sources in Taiwan interviewed in November 1996 speculated that the new DF-21 warhead would be radar-guided in a manner similar to the Radar Digital Area Guidance (RADAG) system used on the U.S. Pershing II, which had been destroyed as a consequence of the 1987 Intermediate-Range Nuclear Forces (INF) Treaty with the former Soviet Union. China's interest in a missile with a Pershing II capability can be inferred as well from Chinese literature; see Zhu Bao, "Developmental Prospects for Surface to Surface Missiles," in Xu Daxhe, ed., *Review on Ballistic Missile Technology*, China Aero Space Corporation, Science and Technology Bureau, 1998, pp. 9-19.
27. "MGM-31 Pershing II," *Jane's Strategic Weapon Systems—Issue 15* (date not available).
28. Range estimates from Beaver, "China Prepares to Field New Missile."
29. Wang Yonggang and Yuan Jianping of Northwestern Polytechnical University, Xian, and Wang Minghai of the Second Artillery Engineering College, "Preliminary Investigation of GPS/INS Integrated Scheme for Ballistic Missiles," *Hangtian Kongzhi* (Aerospace Control), June 1996, pp. 25-28.

tial and Terrain-Contour Matching (TERCOM) guidance systems to give high accuracy to its cruise missiles.³¹ China could gain insights for this guidance technology by studying U.S. Tomahawk cruise missiles reportedly obtained from Afghanistan. Russian and Israeli cruise missile companies are another likely source of advanced cruise missile guidance technology.

China's first new land-attack cruise missile is reported by one source to be the 240-mile-range YJ-22,³² an advanced development of the C-802 anti-ship cruise missile but with a straight wing and a probably better engine. A long-range strategic version of this cruise missile, similar in capability to early U.S. Tomahawk cruise missiles, likely will enter service after 2005. Both new cruise missiles probably will be carried by multiple platforms, such as trucks, aircraft, ships, and submarines.

New Supersonic Tactical Missiles

China is developing ramjet engine technologies to confer supersonic speeds on its missiles that complicate interception. In addition, ramjets offer the potential to increase the range of a smaller missile. China's existing ramjet-powered missiles are large and cannot travel great distances, but the purchase of the Russian Raduga SS-N-22 ramjet-powered anti-ship missile could give China a new source of cruise missile ramjet technology.³³ China

is reported to have purchased co-production rights to the ramjet-powered, Mach-2 speed, 125-mile-range Zvezda Kh-31P missile,³⁴ which was designed by the Russians to counter the radar of U.S. Patriot surface-to-air missiles and the U.S. Navy Aegis ship-defense radar. Attacking radar systems is essential to destroying an opponent's anti-aircraft and anti-missile systems.

New Conventional Missile Warheads

Although many new Chinese ballistic and cruise missiles have the option of carrying a small nuclear warhead, China is placing great emphasis on developing powerful non-nuclear warheads. Mounted on new, much more accurate ballistic and cruise missiles, such warheads make possible long-range precision strike missions without recourse to nuclear weapons, thus reducing the prospect of nuclear retaliation. China is developing Radio Frequency (RF) weapons³⁵ that simulate the electromagnetic pulse created by nuclear explosion, which has the effect of wiping out computer and electronic systems. An RF-armed missile might be able to disable a communication grid on a warship without causing great casualties. China is also interested in building cluster munitions for ballistic or cruise missiles that could disable air-base runways. Such cluster warheads eventually could arm the new version of the DF-21 medium-range ballistic missile.

30. U.S. Department of Defense, *Selected Military Capabilities*, p. 4.

31. China may be considering combining inertial, GPS, and Terrain-Contour Matching (TERCOM) guidance systems. The latter refers to a new system that matches radar pictures of terrain with a computer database of terrain images to guide a missile to its target. See Zhong Long yi, "Application of Combined Navigation Systems on Cruise Missiles," *China Aerospace Abstracts*, March 1993. The author of this article is employed by an institute of the China Aero Space Corporation's 3rd Academy, which is known to be working on cruise missile guidance.

32. "China: Ying Ji-2 (C-802)," *Jane's Defence Weekly*, September 9, 1998, p. 75.

33. China is reported to have purchased 30 to 50 SS-N-22 missiles for its Russian-built *Soveremennyi*-class destroyers. See Nikolai Novichkov, "Russian Firm Starts to Produce Antiship Missiles for China," *ITAR-TASS*, April 7, 1998, and Anatoliy Illykhov, "Far East Plant Making 'Mosquito' Rockets for Chinese Navy," *Moscow RIA*, April 14, 1998, in FBIS-UMA-98-104.

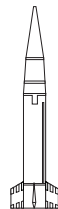
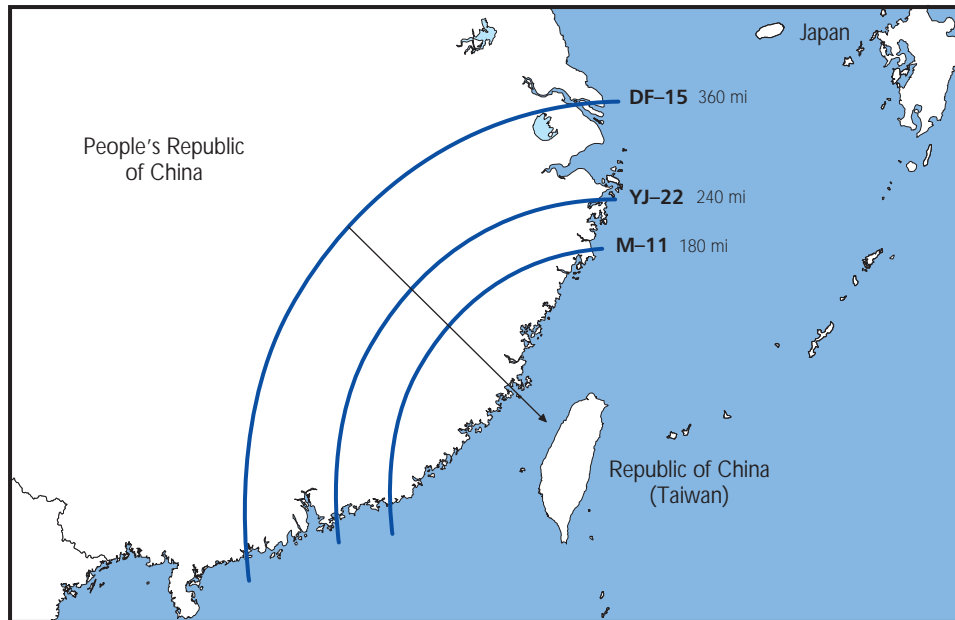
34. The sale of Kh-31P co-production is said to be confirmed by sources in the Zvezda Bureau. See "Russia Boosts Asian Naval Links," *Jane's International Defence Review*, December 1997, p. 6; see also "China and India Are Expected to Become..." *Aviation Week and Space Technology*, August 25, 1997, p. 17.

35. U.S. Department of Defense, *Future Military Capabilities and Strategy of the People's Republic of China*, p. 6. There also is a report that China may have stolen U.S. technology in this area. See Barry and Vistica, "The Penetration Is Total."

Chart 3

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Target Taiwan: Possible Deployment Areas of New Chinese Missiles



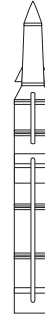
DF-15/M-9



M-11



YJ-22*



DF-21X*

	DF-15/M-9	M-11	YJ-22*	DF-21X*
Function	SRBM	SRBM	LACM	MRBM
Year Operational	1990	2000+	2000+	2000+
Range	600 km/360 miles	300 km/180 miles	400 km/240 miles	Up to 3,000 km/ 1,800 miles (est.)
Payload	500 kg/1,100 lb	800 kg/1,760 lb	?	?
Future Warhead Options	high explosive/ radio frequency/ nuclear	high explosive/ radio frequency/ submunitions/ nuclear	high explosive/ radio frequency/ nuclear	high explosive/ radio frequency/ submunitions/ nuclear
Guidance	Inertial + future GPS/GLONASS	Inertial + future GPS/GLONASS	Inertial/GPS/ GLONASS	possible radar or GPS/GLONASS
Current Accuracy	300m CEP	600m CEP	?	?
Accuracy with Satellite Guidance	< 50m CEP (est.)	?	< 50m CEP (est.)	< 50m CEP (est.)

Note: *Notional configuration. SRBM=Short-Range Ballistic Missile, LACM = Land-Attack Cruise Missile, MRBM = Medium Range Ballistic Missile, GPS = U.S. Global Positioning Satellite, GLONASS = Russian equivalent of GPS, Circular Error Probability = radius of potential circular target area.

Anti-Missile, Anti-Satellite, and Space Warfare

China's government loudly protests U.S. anti-missile plans but says almost nothing about its own anti-missile or anti-satellite programs, or its space warfare plans. The PLA is aware of the need to defend against opposing missiles and the need to exploit the U.S. military's high dependence on reconnaissance and communication satellites.³⁶ PLA literature on future warfare acknowledges the need for a range of systems to deny the enemy's use of space.³⁷ Engineering reports thought to be co-authored by the head of the China Aerospace Corporation's 2nd Academy, which manufactures surface-to-air missiles, indicate that China may be developing anti-missile or anti-satellite systems.³⁸

According to Chinese officials interviewed at the 1998 Zhuhai Air Show, China will complete in two years a new version of the FT-2000 surface-to-air missile that could have an anti-tactical ballistic missile (ATBM) capability. The FT-2000 is designed to home in on the emissions of electronic warfare aircraft like the U.S. EA-6B Prowler. The next version of the FT-2000 will be radar-guided and similar in performance to the Russian Fakel S-300PMU, which China purchased in 1991. These missiles may be related to China's HQ-9 surface-to-air missile program, which sought to marry guidance and command technology from the Rus-

sian S-300 and missile-seeker radar from the U.S. Patriot missile. A U.S. source has told the author that China does indeed have an example of the Patriot; at the 1997 Moscow Air Show, an official with a Russian missile design bureau told the author that the HQ-9 will use the same guidance frequency as the Patriot.

Laser ASAT

Last year, the Pentagon reported to Congress that "China already may possess the capability to damage, under specific conditions, optical sensors on satellites that are very vulnerable to damage by lasers" and that, "given China's current level of interest in laser technology, it is reasonable to assume that Beijing would develop a weapon that could destroy satellites in the future."³⁹ China has invested heavily in its own laser programs but may also benefit from foreign technology. China is recruiting Russian laser technicians, and Chinese engineers appear to be familiar with current U.S. military laser developments and with the potential for lasers to destroy or disable targets.⁴⁰

To support civilian space activities, such as its manned space program, and also for military purposes, China is trying to develop a global space-tracking capability. The Pentagon notes that China already has a good space tracking capability; in 1987, it began to operate a space tracking station

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36. A U.S. Army war game was said to demonstrate the high vulnerability of U.S. forces in the event of any loss of satellite capabilities. See Sean D. Naylor, "U.S. Army War Game Reveals Satellite Vulnerability," *Defense News*, March 10-16, 1997, p. 50.
37. See Ch'en Huan, "The Third Military Revolution," *Contemporary Military Affairs*, March 11, 1996, in Michael Pillsbury, ed., *Chinese Views of Future Warfare* (Washington, D.C.: National Defense University Press, 1997), p. 394, and Major General Zheng Shenxia and Senior Colonel Zhang Changzhi, "The Military Revolution in Air Power," *China Military Science*, Spring 1996, as reprinted in Pillsbury, ed., *Chinese Views of Future Warfare*, p. 299.
38. Yin Xingliang and Chen Dingchang, "Guidance and Control in Terminal Homing Phase of a Space Interceptor," *Systems Engineering and Electronics*, Vol. 17, No. 6 (1995), and Yin Xingliang, Chen Dingchang, and Kong Wei, "Tesoc Method Based on Estimated Value Theory for a Space Interceptor in Terminal Homing," *Systems Engineering and Electronics*, Vol. 17, No. 8 (1995), abstracted in *Chinese Aerospace Abstracts*, Vol. 9, No. 1 (1996), p. 49. Chen is thought to be the head of the China Aerospace Corporation's 2nd Academy.
39. U.S. Department of Defense, *Future Military Capabilities and Strategy of the People's Republic of China*, p. 9.
40. See article by Guo Jin of the China Aerospace Chanchun Institute of Optics and Fine Mechanics in *Guangxue Jingmi Gongcheng* (Optics and Precision Engineering), February 1996, pp. 7-14, in FBIS-CST-96-015, February 1, 1996; see also Ding Bo, Xi Xue, and Yan Ren, "Beam Energy Weaponry, Powerful Like Thunderbolts and Lightning," *Jeifangjun Bao*, December 25, 1995, p. 7, in FBIS-CHI-96-039, February 27, 1996, pp. 22-23.

on the islands of Tarawa in the South Pacific state of Kiribati. China is also reported to be entering into space tracking ventures with Brazil and France.

Space Information Systems

As it seeks the means to deny space to future adversaries, China is seeking also to exploit outer space more effectively for military missions.⁴¹ China is developing new military satellites for high-resolution imaging, radar imaging, signal intelligence (SIGINT) collection, navigation, and communication. At the 1998 Zhuhai Air Show, China announced it would launch six reconnaissance satellites: four imaging satellites and two radar satellites. When in orbit, this network will give China coverage of Asia twice daily for regular imaging and once daily for radar images. Radar satellites can penetrate cloud cover and are very useful for finding naval formations at sea. As does the U.S. military, China probably also will seek to integrate access to commercial satellite imaging into its military operations. China has long been a customer for images from French commercial satellites and is developing signal and electronic intelligence satellites which can also be used, in conjunction with information from imaging satellites, to provide targeting data for missiles, aircraft, and submarine missions. Not content to rely on foreign navigation satellites, such as GPS or its Russian counterpart (called GLONASS), China is developing its own navigation satellite network. At the Zhuhai Air Show, China announced that a future navigation satellite network will be based on small satellites—which are less expensive, easier to launch, and can be replaced quickly.

HOW CHINA'S MISSILES THREATEN AMERICA AND ASIA

China's growing missile forces pose a future threat to the United States and to U.S. forces and allies in Asia. It is not certain how fast China's intercontinental missile forces will grow, nor is it certain that they will grow to rival the U.S. missile

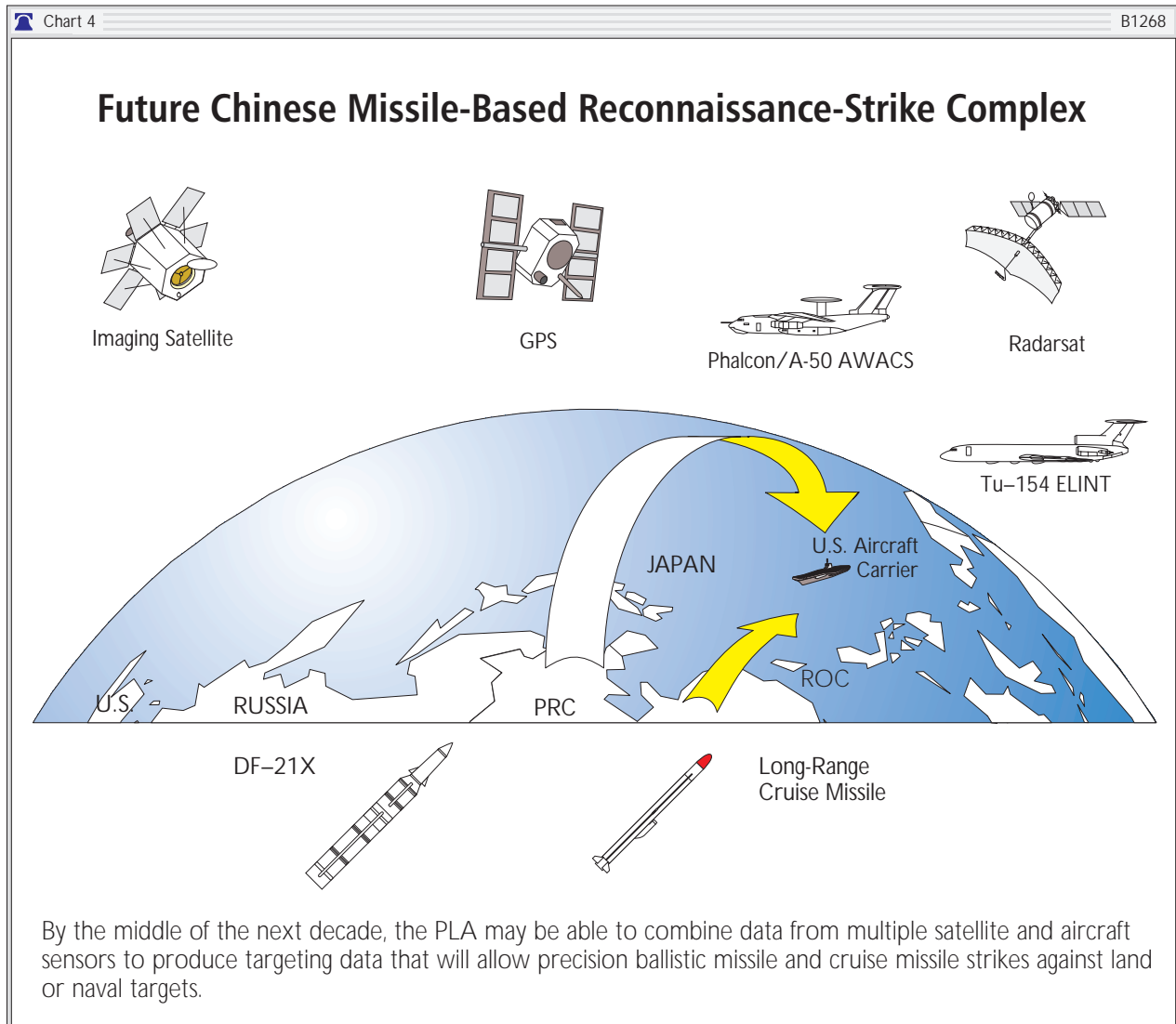
arsenal. But in the next decade, they will increase in sophistication and survivability. In the next decade, the potential of scores to several hundred new, well-concealed Chinese mobile ICBMs will make more difficult the task of defending America from nuclear missile attack. China can be expected also to use its larger ICBM force as a political weapon to constrain American actions, especially support for U.S. friends and allies.

Combining Missile and Sensor Technology

China's most profound challenge to the balance of power in Asia is the PLA's developing "reconnaissance-strike complex" of highly accurate ballistic and cruise missiles, combined with multiple layers of long-range sensors. Over the next ten years, China will build more capable imaging and radar satellites, and perhaps electronic intelligence satellites. Reconnaissance data from satellites will be added to data from future AWACS, electronic intelligence aircraft, long-range radar, and signal intelligence-gathering systems to provide precise targeting data for ballistic and cruise missiles, as well as air and naval platforms. Weapons systems will be guided to their targets with a high degree of accuracy with the help of either Chinese or foreign navigation satellites. The challenge for China will be to fuse these sensors to provide useful reconnaissance and targeting data for its developing cruise and ballistic missiles. China also will have to develop new doctrine, tactics, and inter-service cooperation to enable such long-range missile strike missions. China clearly has some way to go before it can boast of such a capability, but it is working to achieve this goal.

By 2005, China's developing missile forces will pose a grave threat to Taiwan. Chinese satellites and AWACS aircraft likely will be able to provide constant targeting data for missile strikes by satellite-guided DF-15s, M-11s, and new cruise missiles to attack airfields, secondary airfields, ports, military command posts, and major government buildings. Missiles and cruise missiles armed with Radio Frequency warheads could attack communication and power grids to sow chaos among the

41. Richard D. Fisher, Jr., "China Rockets Into Military Space," *The Asian Wall Street Journal*, December 28, 1998, p. 6.



population. The same range of targets in Japan could be attacked by future long-range cruise missiles and DF-21 missiles armed with terminally guided high explosive or Radio Frequency warheads. American military facilities in Japan and Okinawa also would be vulnerable to new DF-21 missiles and future long-range cruise missiles.

POLITICAL WARFARE

China also views missiles as a tool for political intimidation. China fired ten DF-15 missiles near Taiwan in July 1995 and March 1996, and could have fired 20 to 30 missiles in March.⁴² The 1995

missile firing affected Taiwan's stock market and caused some panic. In 1996, the missiles were sent just outside Taiwan's two major ports, Keelung and Kaohsiung. Both demonstrations were intended to illustrate Beijing's anger over its perception that President Lee Teng-hui was seeking an "independent" Taiwan that would never unite with the mainland. This attempt to intimidate Taiwan backfired by increasing the re-election margin of President Lee in the March 1996 elections, but China's use of missiles and the U.S.-China military confrontation of 1996, in which the United States deployed two aircraft carrier groups to deter China, may have unnerved the Clinton Adminis-

42. Fisher, "China's Missile Threat."

tration. By October 1997, the Administration announced a new policy that set new limits on American support for Taiwan: the “three no’s.”⁴³

From this concession, China’s political and military leaders very likely drew the lesson that missile intimidation can work. Late last year, China reportedly held missile exercises that targeted Taiwan and U.S. forces in Asia.⁴⁴ And in early March, it was reported that China might now have 100 to 150 short-range missiles in areas near Taiwan, with possible plans to increase that number to 650 by 2005.⁴⁵ In 1994, the United States sold Taiwan the Patriot PAC-2 system, which has a limited anti-missile capability to defend only a small area. To meet the threat of increased numbers of Chinese ballistic missiles and new cruise missiles, Taiwan will require much more capable missile defense systems.

CHINA’S VERBAL VOLLEYS AGAINST U.S. MISSILE DEFENSE

Despite clear evidence that it intends to make missile forces a major component of its future military power and is increasing its missiles deployed near Taiwan, China is campaigning vigorously against American missile defense plans for Asia.

China has opposed U.S. missile defense plans since the Reagan Administration’s Strategic Defense Initiative and has continued its criticism in recent years.⁴⁶ But in late 1998, as it became clearer that Japan would join the United States in developing Theater Missile Defense (TMD) systems, that the United States would embark seriously on a National Missile Defense (NMD) program, and that the United States might consider selling advanced TMD systems to Taiwan, or might even include Taiwan in multilateral TMD schemes, China decided to begin its most vigorous campaign against U.S. missile defense plans to date.

Since the beginning of this year, China has tried to portray American missile defense plans as a threat to the balance of power in Asia, a threat to arms control, and a grave affront to China’s sovereignty if Taiwan were included in U.S. missile defense plans. China has issued escalating bluster and threats. China’s chief arms control negotiator, Sha Zukang, suggested in a February 12 speech in Washington that China would develop more advanced ballistic missiles in response to NMD and TMD, and declared in a press interview that TMD for Taiwan would “bring severe consequences.”⁴⁷ Sha also suggested that China may

43. President Clinton stated the “three no’s” again on June 30, 1998, during a visit to China: “[We] don’t support independence for Taiwan, or two Chinas, or one Taiwan-one China. And we don’t believe that Taiwan should be a member of any organization for which statehood is a requirement.” No U.S. President ever has so constrained U.S. support of Taiwan.

44. Bill Gertz, “Chinese Exercise Targets Taiwan,” *The Washington Times*, January 26, 1999, p. A1.

45. These numbers reportedly were leaked from a Department of Defense report requested by Congress on Asian missile defense requirements. Despite a February 1 deadline for this report, it was not issued as of the publication date of this *Backgrounder*, reportedly because of efforts by the Clinton Administration to tone down its findings so as not to anger China. See Tony Walker and Stephen Fidler, “US Fears on China Missile Build-up,” *Financial Times* (London), February 10, 1999, p. 1, and Bill Gertz, “China Moves Missiles in Direction of Taiwan,” *The Washington Times*, February 11, 1999, p. A12.

46. For a history of China’s opposition to missile defense, see Banning N. Garrett and Bonnie S. Glaser, “Chinese Perspectives on the Strategic Defense Initiative,” *Problems of Communism*, March–April 1986, and “Chinese Perspectives on Nuclear Arms Control,” *International Security*, Winter 1995–1996; Patrick E. Tyler, “China Warns Against ‘Star Wars’ Shield for U.S. Forces in Asia,” *The New York Times*, February 18, 1995, p. A4; Amelia A. Newcomb, “China Vexed by US Push for a ‘Shield’ Against Nukes,” *The Christian Science Monitor*, May 15, 1995, p. 1; and Zhang Liang, “U.S. Star Wars Program—Repeated Adjustments Carried Out to Ensure Nuclear Supremacy,” *Remin Rabao*, July 15, 1996, in FBIS–CHI–96–150.

47. Ambassador Sha Zukang, Director-General, Department of Arms Control and Disarmament, Ministry of Foreign Affairs of China, “Some Thoughts on Non-Proliferation,” speech before the Seventh Carnegie International Non-Proliferation Conference, January 11–12, 1999, Washington, D.C., at <http://www.ceip.org/programs/npp/sha.htm>; “One on One, Ambassador Sha Zukang,” *Defense News*, February 1, 1999, p. 22.

want to join the 1972 Anti-Ballistic Missile Treaty to emphasize its opposition to missile defenses. In late February, an unnamed Chinese official made a veiled threat to “undertake cooperation on missiles and missile technology with third countries” in response to a U.S. TMD system for Asia.⁴⁸ On March 5, a “senior Chinese official” told *The Washington Post* that U.S. sale of missile defense equipment to Taiwan would be the “last straw” in U.S.–China relations and would lead to “serious consequences.”⁴⁹ In late March, a Hong Kong press report noted that Chinese Leader Jiang Zemin had told an internal government meeting that China would use force against Taiwan if it sought foreign help to prevent unification with China and suggested further that Taiwan’s joining U.S. TMD would lead to a military confrontation.⁵⁰ Though this report cannot be confirmed, it is consistent with China’s escalating threats against U.S. missile defense plans in Asia.

A Strategic Ploy

China’s campaign against U.S. missile defense plans serves military and long-range strategic goals. First, China dearly wants to preserve the ability of its missile forces to have a military and political impact on its neighbors, which can be negated by missile defenses. Second, China is opposing U.S. missile defense plans as a means of stopping a new area of military cooperation between the United States and its Asian allies. U.S.–Asian missile defense cooperation, with U.S. technology as its centerpiece, would preserve an American leadership role in Asia well into the future. China knows that without the protection of U.S. TMD systems, U.S. allies will come to doubt the strength of U.S. defense commitments and become more willing to accommodate China in the future.

CHINA’S EMERGING MISSILE THREAT REQUIRES A FIRM U.S. RESPONSE

China’s growing missile forces, its willingness to threaten Taiwan, and its barrage of threats against American missile defense plans all require a firm response from Washington. At stake is nothing less than America’s leadership position in Asia—obtained at the cost of many American lives in three major wars this century to defend the security and freedom of Asia. The Clinton Administration must give Congress and the American people a clear and frank assessment of China’s developing missile capability. In addition, the Administration needs to offer Americans and Asian allies a firm rationale for missile defense development and cooperation.

Cost of Weakness

By refusing for most of his Administration to support aggressive development of missile defense, and by his long-standing support of the 1972 Anti-Ballistic Missile Treaty that would limit the effectiveness of missile defenses, President Bill Clinton has helped to undermine Asian confidence in missile defense. This plays into China’s clear attempt to divide Asians from their American ally. In South Korea, and to a lesser degree in Taiwan, there is growing interest in building offensive long-range missiles to deter threats rather than building missile defenses. In the absence of effective non-nuclear anti-missile defenses, countries that succeeded in building long-range missiles would be tempted over time to arm them with nuclear warheads. This would trigger U.S. sanctions and cause the collapse of an alliance relationship.

Such fears are not far-fetched. South Korea’s Minister of Defense declared recently that Seoul would not participate in U.S. TMD plans because it was “not an effective countermeasure” against

48. James Kynge, “China Raises Stakes on US Plan for Asian Missile Shield,” *Financial Times* (London), February 26, 1999, p. 1.

49. John Pomfret, “China Warns U.S. Not to Arm Taiwan,” *The Washington Post*, March 6, 1999, p. A1.

50. “Beijing Will Not Hesitate to Go to War If Taiwan Joins TMD,” *Tai Yang Pao* (Hong Kong), March 18, 1999, p. A28.

North Korean missiles and would “also arouse concern from neighboring countries.”⁵¹ South Korea is reported to prefer building offensive ballistic missiles to deter missile threats from North Korea.⁵² Seoul’s apparent lack of concern about China’s missiles is unfortunate. Effective missile defense in Northeast Asia requires the cooperation of Japan, South Korea, and the United States. American early warning satellites, and even eventual space-based anti-missile systems, will be necessary for the effective missile defense of both countries. For example, to prevent Chinese missiles fired at Japan from being shot down over Korea will require the cooperation of Japan, the U.S., and South Korea. It is necessary to secure Seoul’s future cooperation in missile defense.

Centrality of Taiwan

As it used missiles to help force a limitation of U.S. political support for Taiwan, China is now using its opposition to U.S. missile defense to further weaken American support for Taiwan. While not a treaty ally, the United States maintains defense guarantees under the 1979 Taiwan Relations Act, which stipulates that the United States will sell Taiwan arms of a “defensive character.” If the U.S. bowed to China’s demands and did not sell missile defense equipment to Taiwan, that violation of the TRA’s arms sales provision would call into question Washington’s broader commitment to the TRA. China probably would then apply even greater political and even military pressure on Taiwan to force unification on terms that might limit Taiwan’s newly developed democracy. Other U.S. allies and friends in Asia understandably would regard such an abandonment of Taiwan as the end of the period of American leadership in Asia and begin to seek a strategic accommodation with China.

The Clinton Administration has been correct to urge Japan to enter into theater missile defense cooperation with the United States and to sell Taiwan advanced Patriot missiles with a point-

defense anti-missile capability. However, China’s emerging missile threat and its vigorous campaign against U.S. missile defense plans require an active Administration strategy to sustain U.S. security and leadership in Asia. The Clinton Administration should:

- State clearly that China’s emerging missile forces threaten Asian stability. The Clinton Administration needs to regain the rhetorical offensive that has been ceded to China this year. The Administration must mount its own diplomatic campaign that clearly describes China’s developing missile forces and how they threaten U.S. allies and friends in Asia. The Administration also needs, regularly and firmly, to challenge China’s opposition to missile defense. Administration officials should use every opportunity to stress that U.S. National Missile Defense and Theater Missile Defense programs are non-nuclear and defensive. U.S. officials should stress publicly that China’s and North Korea’s missile threats more than justify American development of missile defenses. They should declare that China’s attempt to deny other Asian states their sovereign right of defense is an attempt to conceal the challenge to peace in Asia posed by China’s growing missile forces.
- Accelerate development of an effective U.S. National Missile Defense. Building an effective NMD capability is essential, not just to defend Americans from China’s modernizing ICBM force, but also to demonstrate that missile defense works. This is necessary to strengthen Asian confidence in U.S. missile defense technology over ballistic missile or nuclear weapon alternatives. The Clinton Administration can begin an NMD system by upgrading U.S. Navy Aegis cruisers with the Navy Theater Wide Upper Tier anti-missile system and deploying associated Space Based Infra Red Satellite in low orbit (SBIRS-Low) early warning satellites. Such a system could be deployed as early as

51. “S Korea Refuses Participation in TMD,” *Jane’s Defence Weekly*, March 17, 1999, p. 16.

52. Barbara Opall-Rome, “Seoul Seeks Medium-Range Missile Force,” *Defense News*, March 8, 1999, p. 1.

2003 for about \$8 billion.⁵³ Furthermore, the U.S. should end restrictions on the development and deployment of missile defenses pursuant to the Anti-Ballistic Missile Treaty.

- Use TMD cooperation to strengthen Asian alliances. Washington should emphasize to Japan, South Korea, the Philippines, and Australia that Theater Missile Defense will be a key mission for U.S. military forces in the future. Japan is on the verge of agreeing to cooperation in TMD development, while Australia is quietly expanding cooperation with the United States in some TMD-related areas. The United States should strongly encourage all of its allies to cooperate in expanding regional missile defenses. Washington should continue to urge Tokyo to commit to TMD development projects and should strongly urge Seoul to reconsider its recent opposition to TMD cooperation. Washington should offer Seoul a less expensive means of participation that allows South Korean access to early warning data and command activities. The U.S. should also urge Japan and South Korea to consider missile defense cooperation in conjunction with the United States. The U.S. Pacific Command should also include missile defense activities in its future regional military exercises with allies.
- Sell Taiwan missile defense systems. By selling missile defense equipment to Taiwan, the U.S. will fulfill its obligations under the Taiwan Relations Act and advance the American interest in preserving Taiwan's democratic system. The Clinton Administration should clearly identify China's increased missile deployments as a threat to stability in the Taiwan Strait and call on China to remove its missiles from regions near Taiwan. China's increased missile threat to Taiwan makes it necessary for the United States to offer Taiwan a range of missile defense systems. When Taiwan is ready to formally request additional missile defense sys-

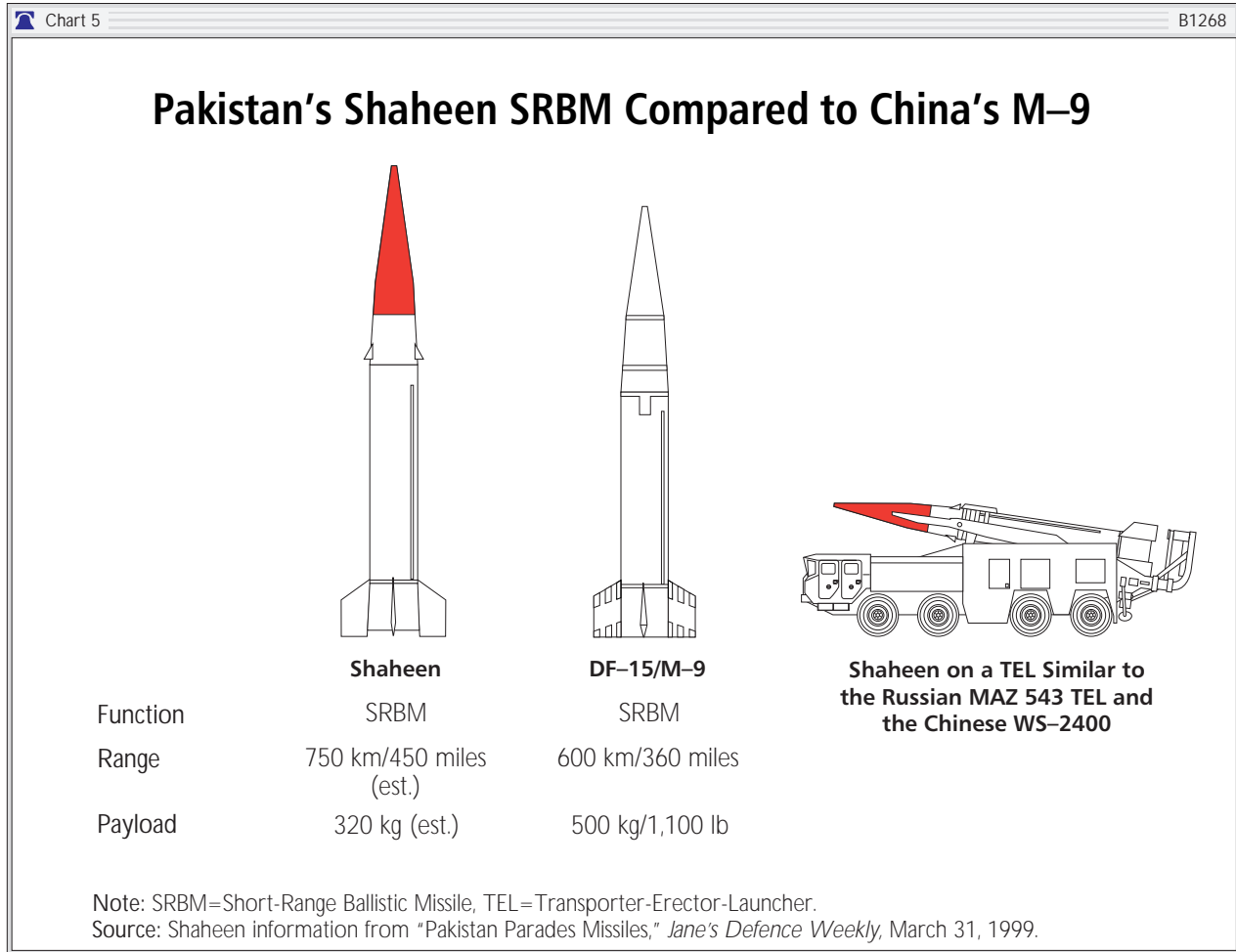
tems, the U.S. should be ready to sell Taiwan equipment such as Patriot PAC-3 missiles and the Aegis naval missile defense system, in addition to long-range radar and high-altitude unmanned aircraft like the Global Hawk to help detect and intercept incoming missiles.

To counter a Chinese strategy that would include deploying more missiles against Taiwan in response to a U.S. sale of missile defense equipment to Taiwan, the United States in the future should sell laser-based missile defense systems to Taiwan. Because lasers use chemical fuel or an electrical energy source, they offer the prospect of an unlimited number of defensive "rounds." Washington should tell Beijing that its sale of missile defenses to Taiwan is consistent with the long-standing American goal that Taipei and Beijing settle the issue of their future relationship by peaceful means.

- Pursue strategic agreements instead of increasing technical cooperation in missiles and space. It is time for the United States to challenge China to enter into broad understandings concerning missiles and nuclear weapons that increase transparency and confidence. The strategic missile de-targeting agreement that Presidents Jiang Zemin and Bill Clinton announced last June does not serve U.S. interests. It is a simple declared agreement that cannot be verified; the missiles can be re-targeted with a few computer keystrokes. Such agreements also create a false sense of progress in arms control. Pakistan's newly revealed Shaheen missile bears a close resemblance to China's DF-15/M-9 missile.⁵⁴ China consistently refuses to sign minimal missile control agreements like the Missile Technology Control Regime and in the past has sold significant missile technology to Iran, Pakistan, Saudi Arabia, and perhaps North Korea. China has intimate knowledge of U.S. nuclear secrets but

53. For more on this recommendation, see *Defending America: A Plan to Meet the Urgent Missile Threat*, Report by The Heritage Foundation's Commission on Missile Defense (Washington, D.C.: The Heritage Foundation, 1999), pp. 2-3, 47-56.

54. Umer Farooq and Duncan Lennox, "Pakistan Parades Missiles," *Jane's Defense Weekly*, March 31, 1999, p. 15.



has never disclosed the contents of its own nuclear and missile forces.

Washington should make clear to Beijing that America desires to avoid future missile competition. Washington also should reject China's suggestion that it join the now-defunct 1972 Anti-Ballistic Missile Treaty; this is merely an attempt to constrain U.S. missile defenses. To demonstrate U.S. resolve, Washington should suspend commercial missile and space cooperation with China until both sides can reach agreements that truly advance transparency and the confidence that neither side will pose a threat to the other's security with nuclear missiles.

- Prevent China from obtaining advanced missile technologies. Until China enters into agreements that increase transparency and

confidence in the areas of missile and nuclear forces, the United States should seek to prevent leakage of sensitive U.S. nuclear and missile technology to China and should urge allies and friends not to sell missile technology to China. Both Congress and the Clinton Administration should investigate the extent and the impact on U.S. national security of Chinese nuclear and missile espionage. During this review, the U.S. should suspend commercial satellite launches on Chinese missiles to demonstrate U.S. anger over China's spying. New security measures at U.S. nuclear laboratories should focus on strict monitoring of all contacts with Chinese nationals. In addition, Washington must make clear to allies and friends like Russia, Israel, Britain, and France that they must not sell China technology that could help China to build better military missiles and space systems.

When China enters into broad strategic agreements with the U.S. that avoid future missile competition, is committed to a peaceful course to settle the issue of its future relations with Taiwan, and does not challenge U.S. alliances in Asia, then the U.S. should resume civil missile and space cooperation with China. In such an environment, the U.S. could even consider strategic military cooperation such as sharing missile defense technologies that allow China to defend itself from nuclear missiles.

CONCLUSION

At the beginning of a new century, the United States faces the prospect of a new strategic competition, this time with China. China is stealing American nuclear secrets to build better missiles that could be used to attack Americans more effectively. China is using its growing missile forces and a campaign of threats against American missile defense plans to advance its goals in Asia. China is using its missile forces to create political pressures that, over time, will divide the United States from its key allies. If America does not develop missile defense systems that defend the United States from

missile attack, and theater-level defenses that can be shared with Asian allies, these same allies will lose confidence in American leadership. Furthermore, President Clinton's lackluster commitment to missile defense and blind adherence to the 1972 Anti-Ballistic Missile Treaty that limits U.S. missile defenses are undermining allied confidence in non-nuclear missile defense.

To prevent the U.S.–China relationship from lapsing into a Cold War–like confrontation, it is essential that America demonstrate resolve and leadership by rapidly developing a National Missile Defense system and theater missile defense systems that could be sold to Asian allies and to Taiwan. Finally, the U.S. should suspend commercial space cooperation with China—which has proven to benefit China's missiles—until China reaches agreements with the United States that advance transparency and increase confidence that neither will pose a nuclear missile threat to the other.

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55. The author would like to thank Heritage Manager of Graphic Design Services Thomas J. Timmons for the graphic illustrations.