

November 5, 1997

## HOW AMERICA'S FRIENDS ARE BUILDING CHINA'S MILITARY POWER

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**T**he October 29 summit between President Bill Clinton and Chinese President Jiang Zemin took place amid growing international expectations that China will become a major power in the next century, both economically and militarily. Increasingly, even though the People's Liberation Army (PLA) is largely an obsolete force, Beijing is seeking to use China's growing wealth to advance its military modernization program by obtaining sophisticated Western weaponry and advanced military technology.

Several friends and allies of the United States, including Russia and Israel, are selling such advanced weaponry and military technology to China, and several European countries, among them France and Britain, also are interested in tapping this market. This is a dangerous strategic development. For example, China could use increased military technology and hardware to build survivable intercontinental ballistic missiles (ICBMs) with which to target the United States. It could build new long-range cruise missiles and, possibly, a power-projection air force. And it could increase its naval capabilities with new submarines and supersonic anti-ship missiles. With such capability, the PLA would pose a realistic threat to U.S. forces and to allies like the Republic of China (ROC) on Taiwan. Or it could sell this technology to rogue states which are less interested in diplomacy. Indeed, China's drive to become a great military power is one of the most important challenges facing the United States in Asia.

The PLA, to be sure, will face great difficulty in absorbing any new military technology, in addition to which budget constraints will affect procurement decisions. This paper, therefore, while examining a broad range of current capabilities and possible acquisitions

<sup>1</sup> This paper is based on a longer study by the author, "Foreign Arms Acquisitions and PLA Modernization," presented to the Conference on the People's Liberation Army, cosponsored by the Institute for Global Chinese Affairs at the University of Maryland and the American Enterprise Institute, September 15, 1997. The author would like to thank Thomas J. Timmons, manager of graphic design services at The Heritage Foundation, for his assistance in designing the graphics for this paper.

- **Stress to China's arms suppliers that a more powerful PLA could threaten peace in Asia as well as their own interests.** The United States should make sure that the Israelis understand that Chinese weapons could be re-exported to rogue states in the Middle East and remind Moscow that China could revive its old claims to territory now controlled by Russia. U.S. friends and allies must understand that if, by selling their weapons to China, they create a larger threat to peace in Asia, the United States might not be able to meet future military requirements in either the Middle East or Europe.
- **Maintain the deterrence capabilities of U.S. forces in Asia.** The United States must move ahead with plans to deploy missile defense systems in Asia and better protect U.S. satellites in space. It also must ensure that modern combat aircraft like the F-22A are fully capable of prevailing in combat, and should develop an inexpensive defense against supersonic anti-ship missiles.

## WHO IS SELLING WEAPONS TO CHINA?

After the 1989 Tiananmen Square massacre, both the United States and the European Union embargoed the sale of weapons to China. This was a change in policy from the period of anti-Soviet cooperation during the 1980s. At that time, the United States, Israel, and several European countries sold their weapons and military technology to China to help it defend its borders against Soviet aggression. By the early 1990s, however, China had turned to Russia to purchase advanced weapons to modernize the People's Liberation Army. Russia remains China's major source of fighter aircraft, air-to-air missiles, ground attack missiles, submarines, and supersonic anti-ship missiles. Furthermore, Russia has become increasingly dependent on sales of weapons to China to support its own financially strapped military research and development sector, and it is not clear that Moscow exercises strict control over its military technical relationship with China, which has deep access to Russian design bureaus and engineers who are selling their data to China.

Israel seeks to support its defense industries through sales to China as well. It continued its military technical relationship with China despite the Tiananmen Square massacre and today is China's second most important source of advanced military technology. Israel has sold its fighter aircraft technology, air-to-air missiles, and (reportedly) cruise missile technology to China.<sup>2</sup> A deal in the works also will provide an advanced Israeli airborne radar to China. Some Israeli officials claim the sale of military technology to China will secure Beijing's agreement not to sell specific weapons to Israel's enemies in the Middle East,<sup>3</sup> which seems not unlike paying China for "protection."

Europe's arms industries also are under growing financial pressure, and some countries like France and Britain are working to end the 1989 European Union arms embargo. By early 1996, Britain had revised its interpretation of the embargo to permit the sale of military technology except that which explodes or delivers explosives. In 1996, Britain sold China a reported six to eight airborne early-warning radar systems.<sup>4</sup> France reportedly has discussed with China the selling of advanced fighter aircraft, aircraft engines, and even an aircraft carrier.<sup>5</sup> There are doubts that China could afford to buy many European weapon systems. However, Europe's re-entry into the China arms market could very well increase

2 Douglas Barrie, "China Provides Cash for Israeli Cruise Missile," *Flight International*, May 17-23, 1995, p. 5.

3 Barbara Opall, "Israel Denies Charges on Tech Sales to China," *Defense News*, July 21-27, 1997, p. 56.

4 Barbara Opall and Michael Witt, "China Pits U.K. vs. Israel in AEW Quest," *Defense News*, August 5-11, 1996, p. 1.

greater Chinese content, continues. This helicopter serves the PLA mainly as a troop carrier, though a naval variant was pictured dropping a torpedo during exercises late in 1995.

### **U.S. Sikorsky S-70C Blackhawk Helicopters**

**Status:** Twenty-four S-70C helicopters had been delivered to China by 1985.

**Background:** The sale of 24 S-70C helicopters dates back to the 1980s, a period of flourishing U.S.-China military relations based on anti-Soviet comity. In 1992, the S-70C was said to be offered for sale following a dearth of spare parts caused by the Tiananmen embargoes.<sup>97</sup> These helicopters are still used by the PLA and very likely were featured during large-scale PLA exercises in 1996. The S-70C can carry 19 passengers or an 8,000-pound payload. China may be looking for U.S. approval to begin receiving spare parts for this helicopter. The *Blackhawk* is the standard U.S. Army transport helicopter and U.S. Navy ASW helicopter, and is used by the Republic of China Navy for ASW.

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97 *Jane's All the World's Aircraft, 1993-94*, p. 567.

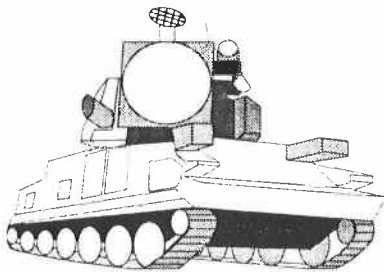
## ARMY SYSTEMS

### Russian BMD-3 or BMD-1P Airborne Combat Vehicle

**Status:** The sale of a Russian BMD airborne combat vehicle to China's airborne forces within the past two years has been reported.

**Background:** A report out of Hong Kong notes that, within the past two years, the Chinese airborne forces have been equipped with a "paratroop combat vehicle...light tank...12 metric tons...uses anti-tank bombs...large-caliber artillery...used to be exclusively owned by Russia's paratroops...."<sup>90</sup> Although the combat weight mentioned is less than but closer to the BMD-3, the mention of the large-caliber gun raises the possibility that the PLA purchased the older BMD-1P. Either vehicle would represent a large increase in the combat capability of PLA airborne forces by providing them with a respectable lightweight infantry fighting vehicle armed with a large-caliber gun and an anti-tank missile. Both BMD models are amphibious, and three can be air-dropped from an Il-76 heavy transport.

### Russian 9M330 Tor (SA-15 Gauntlet) SAM

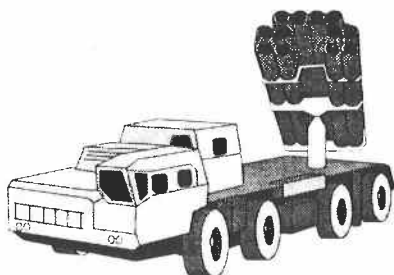


**Status:** China reportedly is taking delivery of 15 SA-15 systems in 1997.

**Background:** Both Russian and U.S. press reports have noted that 15 Russian SA-15 systems would be delivered to China during 1997.<sup>91</sup> This would include at least 120 missiles, but many more probably would be acquired. To the PLA, the *Tor* represents a significant improvement in automated short-range air defenses. Reaction time is five to eight seconds from detection; missiles can be launched at three-

second intervals. Its surveillance radar can detect up to 48 targets at 15 miles, and track the 10 most threatening. Its guidance and tracking radar can engage two targets traveling up to 1,500 mph, by day or night, in all weather, and in a dense ECM environment. A TV-tracking system with a 12-mile range complements the SA-15's performance in all weather and in dense ECM. For China, the SA-15 will be able to defend not only against helicopters and low-flying aircraft, but also against a range of precision-guided munitions (PGMs), unmanned reconnaissance aircraft, cruise missiles, and some ballistic missiles.

### Russian Splav 300 mm BM 9A52 *Smerch* Multiple Launch Rocket System (MLRS)



**Status:** A sale reportedly has taken place, possibly for delivery in 1997, although the number purchased is unknown.

**Background:** According to leaked U.S. intelligence information, China may take delivery of an unknown number of Russian *Smerch* multiple launch rocket systems and an unknown number of artillery rockets sometime in 1997.<sup>92</sup> Sources interviewed at MAKS 97 confirmed that a sale had been made but did not give details. Purchase

90 Liu Hsiao-chun, "Chinese Armed Forces Improve Sea-Crossing Offensive Capabilities," *Kuang Chiao Ching*, July 16, 1997, in *FBIS-CHI-97-225*.

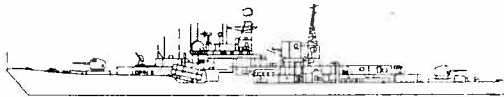
91 Novichkov, "Russian Arms Technology Pouring Into China," p. 73; Anatoliy Yurkin, "Russia: Delivery of Missile Systems to China to Be Stepped Up," *ITAR-TASS*, March 31, 1997, in *FBIS-TAC-97-090*.

92 Bill Gertz, "Russia Sells China High-Tech Artillery," *The Washington Times*, July 3, 1997, p. A1.



The ONI depicts the Type 094 SSBN as a Type 093 that has been extended to carry 16 SLBM tubes. It stands to reason that the Type 094 also will benefit from Rubin Bureau technology that is transferred for the Type 093 project. The ONI expects the first Type 094 to be built by 2005 and a total of three to be completed by 2010. The U.S. Navy, which is facing SSN cutbacks down to a 55-ship fleet, will find China's new and more capable SSNs and SSBNs an added defensive burden.

### Russian Project 956A Sarych *Sovremenniy* Missile Destroyer



**Status:** Negotiations are nearly complete for the purchase of two ships.

**Background:** Chinese interest in the *Sovremenniy* crystallized with the U.S. deployment of carrier battle groups in response to China's provocative 1996 exercises near Taiwan. Leaked intelligence reports in early 1997 were the first indication that a deal was in the works.<sup>88</sup> The two ships could be delivered to China by the year 2000.<sup>89</sup> In the *Sovremenniy*, the PLAN will acquire its first truly effective, modern, multipurpose combat ship which combines credible anti-ship, anti-air, and anti-submarine systems in one platform. It is armed with the SS-N-22 *Sunburn* supersonic anti-ship missile, the very capable SA-N-7 anti-aircraft missile, and the KA-27 anti-submarine warfare (ASW) helicopter. The PLAN will learn a great deal from Russian ship and combat system architecture that will likely be applied to future Chinese combat ship designs. As with the *Kilo*, however, the PLAN is likely to experience maintenance and training difficulties absorbing this new ship. These probably will be complicated further by shortages of spare parts; Russia is hard pressed to maintain its own *Sovremenniy* fleet.

### Russian Raduga Bureau 3M80/3M82 *Moskit* (SS-N-22 *Sunburn*) Anti-Ship Cruise Missile



**Status:** The *Moskit* is to be purchased with the *Sovremenniy* destroyers; it is offered by Raduga for other PLAN ships.

**Background:** China will receive its *Moskit* ASMs with the *Sovremenniy* destroyers. This Mach 2.3, 93-mile range missile was designed to counter the U.S. *Aegis* ship-defense system through high speeds, making it far more difficult to shoot down. Speed, combined with its large warhead, makes it a deadly threat to opposing navies. Although this missile entered Russian service in 1981, it was not until March 1997 that the U.S. Navy tested the *Aegis* system successfully against a target that simulates the *Moskit*. Ships that are not defended by *Aegis* may be vulnerable to the *Moskit*. Even if the most common U.S. anti-ASM system, the *Phalanx*, were able to hit the *Moskit*, it might not be able to stop all the pieces still traveling at Mach 2 to Mach 3 speeds. Taiwanese sources have indicated that although the *Phalanx* might score one or two hits on the *Moskit*, these would not be enough to destroy it.

88 Bill Gertz, "Pentagon Says Russians Sell Destroyers to China," *The Washington Times*, January 10, 1997, p. A1.

89 Steven J. Zaloga, "Russia's *Sovremenniy* Destroyer," unpublished paper, p. 5.

## Russian Zvezda Kh-31 (AS-17 Krypton) Air-to-Surface Missile



**Status:** China is reported to have five missiles and will purchase more.

**Background:** The Kh-31 is a 600-kilogram (1,320-pound), ramjet-powered, anti-ship and anti-radiation missile with Mach 3 speed. It is produced in four versions with ranges varying from 31 miles to 125 miles. It is designed for anti-ship and anti-radiation missions. China soon may purchase this missile to equip Su-27 and J-8IIIM fighters; it reportedly has five non-flying Kh-31A missiles with which to test the engines.<sup>80</sup> Purchasing this missile would enable China to upgrade the attack capability of its fighters and bombers significantly. If China succeeds in buying the longer-range Kh-31 anti-radiation missile, it will gain possession of a potent weapon for attacking AWACS and electronic warfare aircraft. The significance of this purchase is that it could lead to the purchase of other Russian precision-guided munitions such as laser and TV-guided bombs and missiles.

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80 "China and India Are Expected to Become..." *op. cit.*



## Ukrainian Ilyushin Il-76M Transport and Il-78 Aerial Tanker



**Status:** China has seven to ten Il-76M transports and may buy 15 more; discussions on possible purchase of the Il-78 tanker also are taking place.

**Background:** In the early 1990s, China upgraded its transport fleet with its first purchase of seven to ten Il-76M transports. In 1995, the Kanwa Information Group reported that China purchased an additional 15 Il-76Ms from Uzbekistan.<sup>70</sup> The latter were said to be deployed to support airborne troops. During the 1996 military exercises near Taiwan, Il-76s were used to drop paratroops. The Il-76 is the PLA's first dedicated heavy military air transport. In addition to troops, it can carry a range of armored vehicles and missiles like the DF-15 and DF-21, though not with their launchers. At the November 1996 Zhuhai Air Show, the Ilyushin bureau displayed an Il-78 tanker and bureau officials stated they were discussing its possible sale with the Chinese.<sup>71</sup> China could follow the example of India, which is showing greater interest in buying the Il-78 to exploit the long-range strike capabilities of its recently purchased Su-30MKIs.<sup>72</sup> At a range of 1,600 miles, the Il-78 conceivably could refuel five Su-30MKs, which carry about 20,000 pounds of fuel.

## Russian Vypel R-73 (AA-11 Archer) Air-to-Air Missile



**Status:** China acquired the R-73 missile with Su-27SKs.

**Background:** China acquired the R-73 when it purchased its first batch of Su-27SKs—making the PLAAF the first Asian air force to acquire an off-boresight, helmet-sighted air-to-air missile (AAM). It is not known how proficient PLA pilots are with this missile. Nevertheless, the R-73 is capable of 12g maneuvers due to its use of thrust-vectoring vanes that direct engine exhaust. This missile is directed by the Arsenal SHCH-3UM-1 helmet sight, which can confer off-boresight targeting of 60 degrees or a field of fire of 120 degrees. This sight allows for a one-half to two-thirds reduction in the time needed to acquire the target and fire the missile.<sup>73</sup> The U.S. *Sidewinder* short-range AAM confers only a 50-degree field of fire. In exercises between U.S. fighters armed with regular missiles and German Air Force MiG-29s armed with the R-73, the latter wins. The United States will not have this capability until the Hughes AIM-9X helmet-sighted missile enters service early in the next decade. Reportedly, China is considering the purchase of the Vypel K-74ME. This missile has a 120-degree field of view and may have a longer range than the base-line R-73.<sup>74</sup>

## Russian Vypel R-77 (AA-12 Adder) Air-to-Air Missile



**Status:** China may acquire the R-77 with a near-future batch of Su-27s.

**Background:** Reportedly, China may buy this missile for its

70 Yoshihisa Komori, "Military Transport Planes Procured from Uzbekistan," *Sankei Shimbun*, February 21, 1995, p. 1, in *FBIS-CIII-95-037*: "Beijing to Acquire AEW Capability," *op. cit.*

71 Barbara Opall, "European Firms Push to Ease Arms Embargo Against China," *Defense News*, November 11-17, 1996, p. 42.

72 "IAF Requires Tankers to Fulfill Su-30's Potential," *Jane's Defence Weekly*, June 11, 1997, p. 5.

73 Arsenal brochure.

74 Barrie, "Russia and Israel Prepare for Dogfight over Chinese Missile," *op. cit.*

eventual co-production rights.<sup>57</sup> The Su-30MK is a long-range, low-level, fighter-attack aircraft that approaches the capability of the U.S. F-15E. Combined with AWACs and refueling aircraft—which China eventually will acquire—the Su-30MK conveys an impressive capability. It has an un-refueled combat radius of over 900 miles and can carry precision weapons like the *Zvezda* Kh-31 ramjet-powered anti-ship and anti-radiation missile. With multiple refueling, the Su-30MK conceivably could conduct air strikes as far away as Guam, Australia, or the Indian Ocean, or be able to loiter for significant periods over contested areas of the South China Sea.

### Israeli Aircraft Industries *Lavi*/J-10 Fighter-Attack Aircraft



**Status:** Israel and Russia reportedly are assisting in the development of the J-10.

**Background:** This Chinese domestic project began in the mid-1980s but did not gain attention until Israel began assisting in it, at least by the early 1990s. The J-10 is intended to be a low-cost fighter to complement the Su-27/J-11. Estimates of the J-10 production run for the PLAAF approach 300. However, the program is said to have experienced substantial difficulties, and there are rumors that a prototype already has flown and crashed.<sup>58</sup> Despite apparently significant resources spent on this project, it is not clear when the J-10 will enter service, and there are many who doubt that it will ever enter PLAAF service. The Office of Naval Intelligence, however, states that the J-10 is intended to reach squadron service before 2005.<sup>59</sup>



U.S. government sources have said that Israel transported at least one out of an alleged four *Lavi* prototypes to China—a report denied by Israel.<sup>60</sup> The *Lavi* program was canceled in 1987 after receiving \$1.4 billion in U.S. aid. There is long-standing concern in the Pentagon that the J-10 benefits indirectly from U.S. technologies provided to Israel for the *Lavi* project.<sup>61</sup> The J-10 can be expected both to benefit from the *Lavi*'s airframe design and electronic fly-by-wire aircraft control system and, possibly, to use Israeli radar, defensive electronics, cockpit displays, and even helmet sighting systems. A recent report indicates that Russia and Israel are competing to supply the J-10's radar and missile weapons.<sup>62</sup> The Office of Naval Intelligence notes that "the F-10 [or J-10] will enter service with more sophisticated electronic systems than the Su-27SK." It also projects that a naval variant of the J-10, perhaps with twin-engines, may equip a possible Chinese aircraft carrier. In 1996, the ONI noted that the J-10 may be slightly more maneuverable than the F-18E/F, which is slated to become the U.S. Navy's next principal combat aircraft. After having been briefed on the J-10 earlier this year, the Thai Air Force Commander reportedly said that "with technology acquired from Israel, China has produced a top of the line combat fighter."<sup>63</sup>

57 Nickolay Novichkov, "Russian Arms Technology Pouring Into China," *Aviation Week and Space Technology*, May 12, 1997, p. 73.

58 Robert Hewson, "Shenyang J-8IIM 'Finback,' Another Attempt at the Second Generation," *World Airpower Journal*, Summer 1997, p. 21.

59 ONI, *Worldwide Challenges to Naval Strike Warfare*, 1997, p. 16.

60 Opall, "Israel Denies Charges on Tech Sales to China," *op. cit.*

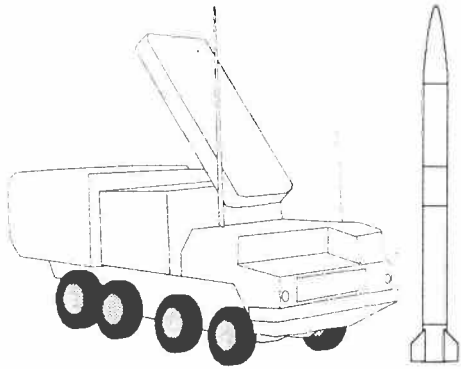
61 ONI, *Worldwide Challenges to Naval Strike Warfare*, 1997, *op. cit.*

62 "Israel/Russia Compete to Arm F-10 Fighter," *Flight International*, October 15-21, 1997, p. 9.

63 Wasana Nanuam, "Commanders Praise PM's Tour de Force: Links with Top Brass 'to Benefit Country,'" *Bangkok Post*, April 7, 1997, p. 2.



## Russian Almaz/Fakel S-300 PMU (SA-10 Grumble) Surface-to-Air Missile (SAM)



**Status:** China acquired more than 100 in the early 1990s.

**Background:** China purchased four to six S-300 PMU batteries (48 to 72 missiles) in 1991, and then purchased an additional 120 missiles in 1994.<sup>45</sup> The S-300s are operated by the PLA Air Force and are said to have been deployed around Beijing and in defense of air bases—presumably Su-27 bases. During the 1996 exercises, several S-300 PMU launches were featured on Chinese television. Obtaining the 56-mile range SA-10 marks a major upgrade in China's SAM capabilities. The SA-10 usually is described as having capabilities similar to those of the U.S. *Patriot*, including limited use against tactical ballistic missiles.

One report notes that it has been tested against a SCUD missile.<sup>46</sup> At MAKS 97, Fakel unveiled its S-300 PMU2 *Favorit*, with improved anti-missile capabilities, in which China is said to have expressed some interest.<sup>47</sup> This system includes a new missile with a range of 200 kilometers (120 miles), better missile warhead, a new 96L6E three-dimensional radar with a range of 300 kilometers (180 miles), and improved electronic counter-counter measures (ECCM) capabilities.<sup>48</sup>

## Foreign Sources for PLA Laser Weapons Technology

**Status:** According to U.S. sources, China is seeking foreign help to build laser weapons.

**Background:** Lasers are designated a priority technological investment area by the "863" technology development program, China's response to the Reagan Administration's Strategic Defense Initiative. Recent PLA writing on future warfare also reflects an appreciation of the potential role of laser weapons. A U.S. source notes that, following the collapse of the Soviet Union, both China and the United States sought out Russian laser experts. Norinco now markets a small battlefield laser for the purpose of dazzling, or blinding, soldiers and sensors. Russia remains a potentially rich source of military laser technology for China. Since the 1960s, several design bureaus have been developing laser weapons, to include NPO Astrofizika, NPO Almaz, and OKB Vympel. Russia has produced or conducted research on free electron, gas, and CO<sub>2</sub> lasers and ultra-high frequency directed energy weapons.<sup>49</sup>

45 Steven J. Zaloga, "'Grumble,' Guardian of the Skies," *Jane's Intelligence Review*, April 1997, p. 156.

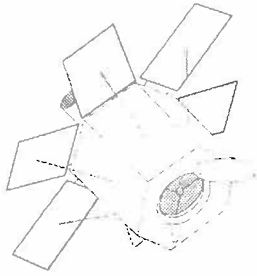
46 SA-10 Grumble...." *Jane's Strategic Weapon Systems*, Issue 23.

47 Piotr Butowski, "Russian Missiles Show Ever-Growing Capability," *Jane's Defence Weekly*, September 10, 1997, p. 5.

48 Data from brochures obtained at MAKS 97 Salon.

49 Steven J. Zaloga, "Red Star Wars," *Jane's Intelligence Review*, May 1997, p. 207.

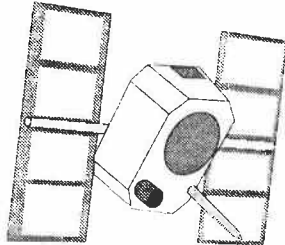
## Use of Commercial Imaging Satellites



**Status:** China has used commercially available satellite imaging for years.

**Background:** China has an obvious interest in exploiting commercial imaging satellite systems. Its current film-based imaging satellite (FSW-2) is said to have only 10 meter resolution—good for finding large objects but not good for detailed surveillance. China is developing a small 550-pound imaging satellite that could have 1.5 meter resolution.<sup>34</sup> After some delay because of Brazilian financial problems, Brazil and China are due in 1998 to launch the China-Brazil Earth Resources Satellite (CBERS), which will have 19 meter resolution and the ability to transmit data to Earth. China uses commercially available images from the French SPOT and U.S. Landsat satellites and may soon have downlinks for both.<sup>35</sup> The Russian Space Agency and Ministry of Defense are selling 2 meter resolution<sup>36</sup> images; but for a price, perhaps 1 meter photos could be obtained. U.S. companies like Orbimage, as well as Israel, will soon launch commercial 1 meter resolution satellites. China probably has watched how U.S. military use of commercial satellite imaging during the Gulf War led to its institutionalization in the Pentagon. As it deregulates commercial access to higher resolution commercial images, the Clinton Administration is seeking the ability to curtail U.S. commercial image dissemination during wartime. But during a future possible conflict with Taiwan, China might be able to obtain militarily useful imaging from Russian, Israeli, French or Indian sources if U.S. pressure has not blocked such access.

## U.S. Global Positioning System (GPS) and Russian GLONASS Precision Navigation Satellites



**Status:** China uses GPS and GLONASS for military and civilian purposes.

**Background:** China has a program to develop its *Twin Star* two-satellite twin constellation navigation satellite that reportedly will provide fixes to within 20 meters (66 feet). A 1994 report said that launching was projected for 1998, but this does not seem likely.<sup>37</sup> In the meantime, China is seeking to incorporate the use of GPS and GLONASS into its military operations and weapon systems. At the Zhuhai Air Show in November 1996, the author was told by an engineer from Beijing Research Institute of Telemetry that China was using GPS to improve the accuracy of its DF-15 short-range ballistic missile.<sup>38</sup> The Institute is known to conduct research on missile guidance systems. In addition, China very likely is developing combined inertial/GPS and terrain-matching guidance technology for cruise missiles. The United States has long grappled with the dilemmas of denying GPS in time of crisis because of growing civilian and U.S. military reliance on this service. Downgrading the signal, however, may prove to be an ineffective means of denying useful precision navigation data. U.S., Russian, and European firms are developing and marketing differential calculation and broadcast systems that use signals from multiple GPS, GLONASS, or combined satellites to produce far better location data than the regular downgraded signal. A recent article out of Hong Kong

34 "Chinese Detail Small Satellite Efforts." *Aviation Week and Space Technology*, October 16, 1996, p. 33.

35 Christian Lardner, "Spot Image Pursues Changing Market," *Cosmos/Aviation International*, February 14, 1997, in *FBIS-EST-97-005*.

36 "Russian Military, Civil Imaging Center Formed." *Aviation Week and Space Technology*, October 14, 1996, p. 33.

37 "Chinese 'GPS' Project Set." *Aviation Week and Space Technology*, October 17, 1994, p. 25.

38 Recounted in "China's Missile Threat." *The Wall Street Journal*, December 30, 1996, p. 12.

navigation equipment to avoid needing pre-surveyed launch sites. It could be used to help build new TELs that could confer greater off-road mobility and survivability for the DF-31 and DF-41 ICBMs currently in development. Excellent suspension is critical to avoid creating hairline cracks in the fuselage that could prove fatal to the missile.

### Russian Raduga KH-65SE/SD Cruise Missiles



**Status:** Russia reportedly tried to sell this missile to China.<sup>22</sup>

**Background:** Sources in Taiwan have reported that Russia has marketed this 360-mile range cruise missile in China. Although these reports would be consistent with the fact that the Kh-65SE cruise missile has been displayed at air shows in Russia and abroad for sales promotion purposes, China has not displayed this missile in recent years. Thus, it is not clear that China has purchased it. The Kh-65 is a proposed short-range version of the Kh-55 3,000-kilometer-range strategic cruise missile. It is not yet known to be in production. The Kh-55 has been in Russian service since 1984 as a nuclear-armed, air-launched cruise missile. The Kh-65SE and the Kh-55 have the same inertial and terrain-following guidance system, but the latter may also use GLONASS, a Russian precision satellite navigation system like the U.S. Global Positioning Satellite (GPS) network.<sup>23</sup> Both missiles have triangular fuselage attachments which appear to hold more fuel.<sup>24</sup> From the Kh-65SE, China could obtain several technologies with which to build *Tomahawk*-like cruise missiles, such as advanced cruise missile design, engine, fuel, and guidance technology.

### Access to Russian "NPO Machinostroyenia" Cruise Missile Technology



**Status:** Advanced Russian NPO Machinostroyenia missiles already are being marketed to China.

**Background:** In 1995, PLA expert and ROC government official Dr. Chong Pin Lin stated that China had purchased Russian cruise missile manufacturing technology. China even hired a Russian cruise missile design team and moved it to the Shanghai area.<sup>25</sup> With a business connection, the PLA could buy new cruise missiles like the *Yakhont*, a 3,000-kilogram (6,600-pound), ramjet-powered, anti-ship cruise missile with a speed of Mach 2 to Mach 2.5 and a range of 72 miles to 180 miles. It was proposed as a smaller alternative to the Raduga 3M80 *Moskit* in the early 1980s, but has not been produced until recently.<sup>26</sup> Russia's Rubin design bureau apparently is willing to put this cruise missile in a new hull section to backfit *Kilo*-class submarines.<sup>27</sup> Its small size would allow a *Sovremenniy*-class destroyer to carry twice as many, and eases the task of backfitting to Chinese destroyers of the *Luda* and *Luhu* class. Company officials believe that "potential customers for *Yakhont* are in the Middle East and Far East."<sup>28</sup> Current Chinese ramjet-powered cruise missiles (like the C-101 and C-301) are too large to be used by ship or air platforms. The *Yakhont* offers China technology that may contribute to much more compact long-range, vertical launch, relatively inexpensive ramjet cruise missiles that are more survivable against an array of Western anti-missile systems.

22 From personal communication with sources in Taiwan.

23 Steven J. Zaloga, "Russian Strategic Cruise Missiles," *Jane's Intelligence Review*, May 1996, p. 200.

24 John W. R. Taylor, "Gallery of Russian Aerospace Weapons," *Air Force Magazine*, March 1997, p. 74.

25 "Beijing, Russia Said Developing Cruise Missile," *Lien Ho Po*, July 30, 1995, in *FBIS-CHI-95-167*.

26 See V. P. Kuzin and V. I. Nikolovskiy, *Voenna-Morskoi Flot SSSR 1945-1991* (St. Petersburg: Istoricheskoe Morskoe Obschestvo, 1996), p. 332; translated and supplied by Steven Zaloga.

27 Vertical submarine launching for the *Yakhont* is illustrated in an NPO Machinostroyenia brochure.

28 Nikolai Novichkov, "Revealed: Russian Ship-Killer Poised for Export," *Jane's Defence Weekly*, August 6, 1997, p. 10.

that selling advanced military technology to China could lead to the sale of more effective Chinese weapons to Iran—thereby increasing Iran's threats not only to Israel, but to U.S. forces in the Persian Gulf. The United States should emphasize to Britain and France that their interests are not served by instability in the Middle East. This instability could be stoked by sales of advanced Chinese weapons to that region. The United States also should make certain that Russia understands that a more militarily powerful China could revive old claims to territory now under Russian control. Both Israeli and European leaders should be told that a stronger China may force the United States eventually to decide between competing regional interests in times of crisis. This may mean that the United States will lack the military resources to defend a European or Middle Eastern ally during a time of multiple tensions.

- **Maintain deterrence capabilities of U.S. forces in Asia.** More modern Chinese military forces will compel the United States to develop and deploy the forces necessary to deter China from challenging U.S. interests in Asia militarily. To respond to developing PLA capabilities, the United States should proceed with its plans to deploy theater missile defenses in Asia. It also is important that the United States better protect its space reconnaissance and communication satellites. The United States should develop advanced air-to-air missiles to ensure that new fighter aircraft like the F-22A, the F/A-18E, and the future Joint Strike Fighter do not lose their superior edge. Finally, the United States must develop an inexpensive but effective defense against supersonic anti-ship missiles that can be sold to U.S. allies in Asia. If the United States cannot do so, it should consider selling conventional submarines to Taiwan so that Taiwan can deter Chinese naval forces armed with these missiles.

## CONCLUSION

Despite increasing evidence that U.S. allies and friends are helping China to build a more powerful military force, the Clinton Administration has failed to develop an effective strategy to counter those sales. With the help of foreign military technology, China could build more capable missile, air, and naval forces by the end of the next decade. The Administration must formulate a strategy to convince Israel, Russia, and the European countries to halt the sale of advanced military technology to China until Beijing peacefully settles its differences with Taiwan, stops its proliferation of dangerous military technology, and engages in strategic arms control with the West.

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## The Dangers of Selling Advanced Technology to China

Sales of advanced weapons and technology to China by Russia, Israel, and some European countries are creating potential challenges to peace in Asia. But they also are creating dangers to the selling countries. These dangers include the likelihood that:

- 1. China will gain more military tools with which to pursue its goals.** With a stronger PLA, Beijing may be tempted to rely more frequently on military force instead of diplomacy to achieve its regional goals. China may decide to use more capable air and naval forces to enforce its claims to most of the South China Sea, which contains sea lanes critical to the prosperity of Asia. It also may be tempted to use military force to pressure Taiwan into a diplomatic accommodation that could derail that quickly developing democracy. Both eventualities would compel the United States to respond with force, engaging in conflicts that most Americans would prefer to avoid.
- 2. Additional pressure will be put on the United States to increase its military capabilities in Asia.** In order to maintain its strategy of deterring conflict in Asia, the United States will have to devote more of its scarce defense resources to modernizing its own anti-missile defense, aircraft, and ship defenses there. Failure by the United States to respond to these growing PLA capabilities by selling advanced weapons to America's Asian friends and allies could undermine deterrence and tempt China to challenge U.S. interests in Asia.
- 3. The United States will be forced to choose between regional interests.** It is doubtful that the U.S. Congress will fund aircraft carriers, B-2 bombers, or F-22 fighters that are more expensive than those already in the plans. Therefore, the rise of a more capable PLA may mean that the United States will have to shift its defense resources from region to region as potential conflicts arise, leaving the United States at times unable to protect its interests in the Middle East or Europe. In part, these choices may be imposed on the United States by what the Russians, Israelis, and Europeans sell China today.
- 4. There will be long-term threats to China's current arms suppliers.** China's low-tech weapons exports are declining. But with foreign technology, China could develop new fighter aircraft, missiles, and submarines that it could then sell to rogue countries. For example, to keep its market in Iran, China may be tempted to sell Iran the Israeli-assisted J-10 fighter or *Python*-derived air-to-air missiles to compete with Russian aircraft. In addition, China's growing population pressures may force it eventually to covet Russian Far East territories. With a stronger military, Beijing could press demands for greater economic access and eventual control over those Russian territories.

So long as China seeks to control vital sea lanes in the South China Sea or threatens to use military force against Taiwan, the United States must view with caution the prospect of a more modern and capable Chinese military. The United States defense community should devise a more effective strategy to engage China's current arms and military technology suppliers and convince them to curtail sales as long as Beijing pursues goals that could destabilize peace in Asia. Those who sell arms to China today for the most part do not have the global strategic obligations that are borne by the United States. Russians, Israelis, and Europeans can afford Asian policies that are separate from Washington's



missile itself.<sup>9</sup> Sources in Taiwan note that Russia tried to sell China its 180-mile cruise missile, the Raduga Kh-65SE. This missile needs only extra fuel to equal the capability of its sister, the 1,800-mile range Kh-55 strategic cruise missile.

To increase its ability to target new missiles, China is seeking foreign radar satellite and imaging satellite technology. Radar satellites are especially helpful in penetrating bad weather and finding naval formations at sea. China has a domestic radar satellite program but is known to be seeking Russian and European radar satellite technology to help with this project. As China tries to build better imaging satellites, it also seeks greater access to commercial satellite imaging services. It already has a downlink for France's SPOT imaging satellite, and it may seek access to new commercial satellite imaging companies in the United States and Israel that soon will launch a satellite with one-meter resolution—the standard for useful military missions.

Because it realizes that it may have to contest control of outer space, China also is developing its anti-satellite and anti-missile systems. Russia could offer its own anti-satellite systems for sale. China has purchased the Russian S-300PMU surface-to-air missile and could modify it to give it a limited anti-missile capability. It also may be trying to buy the Russian S-300V system, which has a clear anti-tactical ballistic missile (ATBM) capability.<sup>10</sup> Possessing both these Russian missiles could help China build its own anti-missile systems. China also seeks to develop laser weapon systems, and Russia is a likely source for advanced military laser technology.

### Air Forces

Today, the PLA Air Force is comprised largely of 1950s-era Soviet-designed aircraft that pose little threat to China's neighbors or to U.S. forces in Asia. However, aircraft, missiles, and radar from Russia, Israel, and Britain are helping China to build a far more capable air force. Again, by absorbing foreign technology, China could field an air force that is much more capable of achieving distant air superiority and conducting interdiction missions by the end of the next decade.

In the early 1990s, China purchased 50 Russian Sukhoi Su-27 fighters; and in 1996, it reached an agreement to co-produce at least 200 more. The Su-27 is an advanced fighter that in some respects is better than the U.S. top-of-the-line F-15 fighter jet. According to sources interviewed at the 1997 Moscow Aerospace Salon air show, a third batch of 21 Su-27s will be equipped with a better radar and will be capable of firing new Russian missiles, such as the 56-mile range R-77 air-to-air missile that is self-guiding like the U.S. AIM-120 advanced medium-range air-to-air missile (AMRAAM). The new radar also can guide the Russian *Zvezda* Kh-31 supersonic anti-ship missile reportedly being purchased by China.<sup>11</sup> Both of these missiles are very sophisticated and difficult to counter. Finally, China reportedly is trying to purchase the Su-30 fighter, an attack version of the Su-27 which can carry a wide array of precision-guided bombs and missiles.<sup>12</sup>

Israel is helping China to build its J-10 fighter, which will utilize technology from the canceled Israeli *Lavi* fighter, a project that was subsidized by about \$1.4 billion in U.S. aid. Although the J-10 program is encountering some difficulties, it could result in a

9 Barrie, "China Provides Cash for Israeli Cruise Missile," *op. cit.*

10 Author interview, Moscow Aerospace Salon, August 21, 1997.

11 "China and India Are Expected to Become...," *Aviation Week and Space Technology*, August 25, 1997, p. 17.

12 "China Expands Reach with Russian Destroyers," *Jane's Defence Weekly*, January 15, 1997, p. 5.