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The Challenge of Chinese Arms Proliferation:
U.S. Policy for the 1990s (U)

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The author conducts an extensive analysis of Chinese arms sales and their significance for the United States. Weaponry is sophisticated and includes assistance and technology which aid clients in developing their own weapons. China's highest leadership approves and is motivated primarily by strategic and political--not economic--considerations. The author concludes that Chinese arms sales pose a serious threat to U.S. mid-term security interests, and will persist and be resistant to U.S. and multilateral pressures. Finally, he recommends that the United States strictly limit transfers of dual-use technology to China; that it target specific kinds of Chinese arms transfers to certain countries, rather than seek blanket prohibitions; that it seek frequent, frank dialogue with Chinese officials; and that it encourage the development of antiballistic missile systems by potential targets of Chinese missiles. He also urges the United States to strengthen the effectiveness and enforcement powers of the Missile Technology Control Regime and similar international regimes.

People's Republic of China; American interests; arms exports/transfers; weapons technology; Chinese arms policy; Missile Technology Control Regime 89

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THE CHALLENGE OF CHINESE ARMS PROLIFERATION: U.S. POLICY FOR THE 1990s

R. Bates Gill

August 31, 1993

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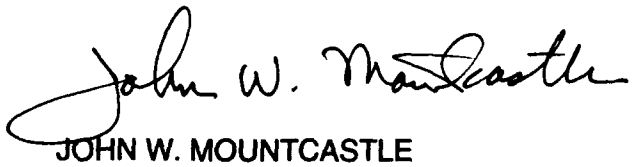
FOREWORD

The People's Republic of China is an active supplier of weapons and military technology to a number of countries in the Middle East and Asia. Since the recipients of these items and services often oppose the objectives of the United States and its allies, Chinese arms transfers pose a growing problem in a troubled region.

After carefully analyzing the patterns of Chinese arms sales, the author concludes that they not only threaten U.S. interests, but clearly represent China's long-term aspirations to become a more dominant and influential regional and continental power. Dr. Gill concludes with a series of policy recommendations for the United States, suggesting ways to deal with this emerging threat.

This study addresses one of the identified study requirements of SSI's annual research program, "The Army's Strategic Role in a Period of Transition: A Prioritized Research Program, 1993."

The Strategic Studies Institute is pleased to offer this timely study as a contribution to the on-going discussions regarding U.S. strategy in Asia and the Pacific.



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SUMMARY

To countries in unstable regions throughout the Middle East and Asia—many of which are hostile to the United States—the People's Republic of China (PRC or China) acts as a leading supplier of conventional weapons, missiles, missile technology, and nuclear technology. The proliferation of such weapons and technologies poses a growing threat to American interests, American allies, and to regional stability and, as such, stands out as a critical concern for U.S. security planners and policymakers. But, because Chinese arms exports are not simply business deals, but are seen in Beijing as a crucial part of China's strategic, political, and economic policies, the United States is limited in what it can do to protect its interests in the face of arms transfers from China.

This study seeks to unravel and solve this dilemma first by analyzing arms exports from the People's Republic of China to determine their patterns, motivations, and the principal challenges they present to the security interests of the United States. Second, based upon and responding to this analysis, the study sets out a focused and realistic policy of targeted management. This policy recognizes the principal threat to be the proliferation of Chinese advanced weapons and weapons systems such as missiles, nuclear technology, and technical assistance. It calls for U.S. policymakers to respond with the development of antitactical ballistic missile systems, the cut-off of arms trade activity with the PRC, the intensification of efforts to conduct constructive dialogue at several levels of the Chinese arms export establishment, the tolerance and even encouragement of certain PRC arms exports, and the strengthening of pertinent international regimes and agreements handled in a sensitive and rational manner. To analyze Chinese arms exports, the patterns and motivations of Chinese arms exports are first examined and delineated. The findings, in turn, lead to conclusions about the nature and direction of Chinese arms exports. These conclusions provide the basis upon which to set out appropriate policy responses.

Based upon several years' research on arms exports from the People's Republic of China, including discussions with military officials, government officials, and scholars at some of China's leading international and strategic studies centers, this study reaches the following findings regarding patterns and motivations of Chinese arms transfers:

RESEARCH FINDINGS

Patterns.

- Chinese weapons exports go chiefly to countries in two areas: countries in Asia which border China or fall within 150 miles of its borders; countries on the Persian Gulf.

- Intensified military R&D efforts in the PRC result in the export of increasingly sophisticated Chinese weaponry, especially in aircraft and missiles, and—disturbingly—assistance and technology for clients to develop an indigenous capacity to produce, deploy, and export conventional weapons, missiles, and nuclear weapons.

- No longer reactive or defensive in nature, Chinese arms transfers since the early 1980s are actively and vigorously exported as opportunities arise.

- Weapons transfers occur with the express or tacit approval of China's highest ranking leadership. This is especially true of important, large-scale and sensitive arms exports.

Motivations.

- Arms transfers are not driven exclusively or even primarily by pure and simple economic motives. The motivating factors behind Chinese arms transfers are far more complex, and often have to do with strategic and political considerations, as well as economic motivations.

- Chinese decision makers who conduct arms transfers see this activity as the legitimate conduct of a sovereign nation in pursuit of its strategic, political and economic interests, and as a way to enhance China's international status and prestige as one of the world's leading powers.

These findings lead to the following conclusions regarding the nature and direction of Chinese arms exports.

CONCLUSIONS

- Current deployments of Chinese weapons abroad do not present a significantly serious threat to American security interests *in the short-term.*
- Over a slightly longer period (the next 5-10 years) the development and transfer of Chinese advanced weapons, weapons technology, and indigenous production assistance—including aircraft, missiles, and nuclear-related technology—pose a significant and serious threat to American security interests.
- China's arms transfers represent assertions of China's long-term aspirations to become a more dominant and influential regional and continental power.
- China's weapons and weapons technology transfers will persist and will be resistant to unilateral pressures on the part of the United States, and to multilateral efforts by the international community to curb its arms exports.

These conclusions lead to the following policy caveats as well as policy recommendations to be undertaken in the areas of bilateral relations, international relations, and military defense.

POLICY CAVEATS

- U.S. security planners and policymakers must recognize that the United States is severely limited in

its ability to affect Chinese arms export policy. Under these circumstances, a realistic policy of "targeted management" is the best approach.

- Highly publicized actions presented or perceived as a means to punish or isolate China will be counterproductive.

POLICY ACTIONS

Bilateral Actions.

- Strictly limit activities with the PRC which involve the transfer of dual-use technologies in military aircraft and missiles.

- Rather than seek blanket prohibitions on Chinese arms transfers, specifically target pressure to discourage certain types of Chinese arms transfers to certain countries which are hostile to the United States and its allies.

- Encourage frank and frequent dialogue with concerned Chinese officials, both at the ministerial level and below. These negotiations must be targeted not only at the traditional ministries of the Chinese state, but they must also address decisions being carried out at the subministerial level. At this level, key export decisions are made and often implemented outside official channels.

International Actions.

- Strengthen the effectiveness and enforcement powers of relevant international agreements on weapons transfers such as the Missile Technology Control Regime (MTCR), the United Nations Arms Trade Register, and the nuclear Non-Proliferation Treaty. In particular, seek the full and active membership of countries which produce and export missile technology, but which are not currently full-fledged members of the MTCR—China being the leading example.

Military Actions.

- Encourage the development of antitactical ballistic missile systems, including their deployment where necessary to defend against the use of Chinese missiles in the hands of potential adversaries.

These findings, conclusions, and policy recommendations receive full treatment and analytical support over the next four chapters. After a brief presentation on the background and recent developments of Chinese arms transfers, the analysis will turn to a detailed discussion of patterns and motivations in Chinese arms transfers. The final two chapters of the study will first summarize the principal threats posed by Chinese weapons exports, and will then conclude with a more in-depth presentation of policy recommendations.

CHAPTER 1

BACKGROUND AND RECENT DEVELOPMENTS IN CHINESE ARMS TRANSFERS

> You can see with your own eyes that China is a trustworthy and responsible country.
>
> Deng Xiaoping to U.S. Secretary of Defense Frank Carlucci, 1988[1]

Today, from Harare to Damascus to Rangoon to Pyongyang, arms from the People's Republic of China (PRC or China) stock the arsenals of numerous countries in the developing world: Zimbabwe, Egypt, Syria, Saudi Arabia, Oman, Iraq, Iran, Pakistan, Sri Lanka, Bangladesh, Burma, Thailand, Cambodia, Laos, and North Korea. among others. Over the past 10-15 years in particular, China has stepped-up its arms export activities, a surge which largely accounts for China's rapid rise to become the world's third largest supplier of weaponry to the developing world at the beginning of the 1990s.[2] Indeed, over the past decade, China stands out as an important supplier of weaponry because of a number of significant and often controversial arms export activities, often involving potential adversaries of the United States—Iran, Iraq, Libya, North Korea, and Syria—as well as others such as Burma, Egypt, Pakistan, Thailand, and Saudi Arabia.

Yet, while growing concern over China's activities in the international arms market seems a relatively recent development, nevertheless the PRC has engaged in the arms trade since its founding in 1949.[3] Since the early 1950s, China has maintained its position as one of the five largest suppliers of conventional weaponry to the developing world. (See Table 1.) Nevertheless, in comparison to other principal weapons exporters, China's share of the total arms export market was

relatively minor—consistently between 1 and 3 percent—especially in the 1950s and 1960s.

TOP FIVE ARMS EXPORTERS TO THE DEVELOPING WORLD 1951-1992

1951-59	1960-69	1970-79	1980-89	1990-92
1. U.S.	1. Soviet Union	1. Soviet Union	1. Soviet Union	1. USSR/Russia
2. U.K.	2. U.S.	2. U.S.	2. U.S.	2. U.S.
3. Soviet Union	3. U.K.	3. France	3. France	3. China
4. France	4. France	4. U.K.	4. China	4. France
5. China	5. China	5. China	5. U.K.	5. U.K.

Source: Michael Brzoska and Thomas Ohlson, *Arms Transfers to the Third World, 1971-1985*, Oxford: Oxford University Press, 1987, Appendices 4A and 4B; Stockholm International Peace Research Institute, *SIPRI Yearbook 1993: World Armament and Disarmament*, Oxford: Oxford University Press, 1993, Table 10.10.

Table 1.

Over the years since 1949, China provided different forms of military transfers—training, advisers, military-related construction projects, small arms, licensed production agreements, and major conventional weapons exports—to no fewer than 29 armed movements and 40 countries. In the 1950s and 1960s, the PRC was particularly active in supporting revolutionary governments and insurgent movements in less-developed countries. Since the 1970s, Beijing has extended military aid to, or has had military ties with a wide range of actors including Israel, the PLO, Zimbabwe, South Africa, North Korea, the United States, Iran, Iraq, Taiwan, and the Nicaraguan Contra rebels. China provided training to some 23 liberation movements, and small arms to perhaps as many as 45 recipients. As for major conventional weapons exported by China between 1950 and 1992, 15 countries imported Chinese missiles or missile technology, 27 countries received artillery and armor from the PRC, 23 countries imported Chinese naval vessels, and 23 countries took in PRC military aircraft. (See Table 2.)

COUNTRIES RECEIVING MAJOR CONVENTIONAL WEAPONS FROM THE PRC, 1950-92

Missiles	Armor/Artillery	Ships	Aircraft
Afghanistan	Afghanistan	Albania	Albania
Albania	Albania	Algeria	Bangladesh
Bangladesh	Angola	Angola	Cambodia
Cambodia	Bangladesh	Bangladesh	Chile
Chile	Burkina Faso	Cambodia	Egypt
Egypt	Cambodia	Cameroon	Iran
Iran	Congo	Cape Verde	Iraq
Iraq	Egypt	Congo	Laos
Myanmar	Guinea	Egypt	Myanmar
Nicaragua	Guinea-Bissau	Equatorial Guinea	North Korea
North Korea	Iran	Ghana	North Vietnam
Pakistan	Iraq	Guinea	North Yemen
Saudi Arabia	Mali	North Korea	Pakistan
Syria	Myanmar	North Vietnam	Peru
Thailand	Nepal	Myanmar	Romania
	North Korea	Pakistan	Somalia
	North Vietnam	Romania	Sri Lanka
	Oman	Sierra Leone	Sudan
	Pakistan	Sri Lanka	Tanzania
	Somalia	Tanzania	Thailand
	Sri Lanka	Thailand	United States
	Sudan	Tunisia	Zambia
	Tanzania	Zaire	Zimbabwe
	Thailand		
	Zaire		
	Zambia		
	Zimbabwe		

Source: R. Bates Gill, *Chinese Arms Transfers: Purposes, Patterns, and Prospects in the New World Order*, Westport: Praeger, 1992, Table 1.4; SIPRI database, 1993.

Table 2.

But, most noticeably—and most disturbingly in the eyes of U.S. policymakers—beginning in the early 1980s the PRC greatly boosted its activities as an arms supplier: quantitatively, qualitatively, and in the diversity of its clientele. Quantitative measurement of China's arms exports offers one useful way

to grasp China's growth as an arms supplier. Over the 20-plus years from 1970 to the present, China significantly increased its share of total arms exports to the developing world from just 1.8 percent for the period 1970 to 1979 to capture 7.5 percent of the market from 1986 to 1990, and 8.8 percent of the market measured over the 5-year period 1988 to 1992.[4] In the 1990s, China's share of the developing world arms market continues to grow, gaining 7.1 percent in 1990, 12.9 percent in 1991, and 16.5 percent in 1992.[5] Thus from the late 1980s and into the early 1990s, China has held its position as the third largest supplier of weapons to the developing world. It is worth noting that the volume of Chinese weapons exports over the period 1986-90 (U.S. $7.569 billion) is nearly five times greater than the level recorded for the period 1976-80 (U.S. $1.579 billion), and a more than 60 percent increase over the period 1981-85 (U.S. $4.655 billion). In fact, total PRC arms exports for the 1986-90 period alone is more than the total for the previous 14 years' worth of Chinese arms transfers combined (1972-86: U.S. $7.381 billion).[6] These figures show an upward trend in the quantity of Chinese arms shipments, a rise that reached its peak in 1987 when China exported nearly U.S. $3.0 billion worth of weaponry. With the end of the Iran-Iraq War in 1988, the value of Chinese weapons exports to the developing world dropped for a time to U.S. $945 million in 1989, but has generally risen since then: U.S. $1.249 billion in 1990; U.S. $1.705 billion in 1991; U.S. $ 1.535 billion in 1992.[7]

Since the late 1980s, many observers note that Chinese weapons exports should decline for a number of reasons: the end of the Iran-Iraq War; the display of modern weapons technology by the American-led coalition against Iraq; the increasing availability of sophisticated weapons from the former Soviet Union. However, the figures on Chinese weapons exports through 1992 do not support this claim. Since 1989, Chinese arms exports have increased an average of nearly 20 percent per year.[8] This figure includes 2 years of annual growth in excess of 30 percent (1989 to 1990 and 1990 to 1991), and 1 year where exports declined by 10 percent (1991 to 1992). Today's level of PRC arms exports equals that of the mid-80s. Thus, in today's shrinking global arms market, PRC arms exports over the past 3-4 years have remained

relatively steady. In fact, while global arms exports to the developing world since 1989 have declined by a dramatic 57 percent, PRC arms exports over this period have gone up.[9]

Recent Developments, 1990-93.

The following section will bring us up to date by focussing upon the most recent developments in Chinese arms transfers in the early 1990s.[10] In the 1990s, China supplied weapons and weapons technology to no fewer than 15 recipients: Algeria, Bangladesh, Burma, Chile, Iran, Khmer Rouge, Laos, North Korea, Pakistan, Peru, Sri Lanka, Sudan, Syria, Thailand, and Zimbabwe. However, 93 percent of China's arms transfers in the period 1990-92 went to five countries: Burma, Bangladesh, Iran, Pakistan, and Thailand.[11] In concentrating its arms exports on these countries, the PRC continued a trend developed in the 1980s to provide most of its weapons to three major regions: Middle East, South Asia, and Southeast Asia.

Arms Transfers To the Middle East. Following the end of the Iran-Iraq War in 1988, China's arms transfers to the Middle East were reduced, though China will continue to maintain a presence in the region as an arms supplier. This point was underlined in September 1992 by a Chinese translator's error in which Chinese Foreign Minister Qian Qichen was thought to have said that China would halt all weapons sales to the Middle East. The statement was hastily retracted the next day, as China asserted its intention to export arms to the Middle East for "defensive purposes, in limited quantities, and in a way that would not destabilize the region."[12]

China's massive supply of armor, artillery, and missiles to Iraq ended in 1988. But some comparatively smaller arms transfers from China have since been reported, most prominently the delivery of C-601 air-launched antiship missiles from 1988 to 1990.[13] China officially suspended the export of any arms to Baghdad following Iraq's August 1990 invasion of Kuwait. However, reports surfaced in October 1990 that the Chinese military production conglomerate China North Industries Company (NORINCO) planned to supply Iraq with lithium hydride, a chemical used in the manufacture of nerve

gas, missile fuel, and hydrogen bombs, a report which the PRC flatly denied.[14]

China was active in other parts of the Middle East as well. Subsequent to a May 1991 meeting between Syrian and Chinese defense officials, the PRC allegedly went forward with its plan to export the M-9 surface-to-surface missile to Syria. It remains unclear whether China completed this shipment, although in 1991 reports claimed that Damascus deployed 24 M-9 missiles.[15] The PRC and Egypt are working together under a June 1990 agreement in the development of Egypt's indigenous missile production capability, upgrading Soviet antiaircraft missiles and surface-to-surface missiles.[16] Also in the region, China maintains a presence in Saudi Arabia, where, according to a U.S. Defense Intelligence Agency report, perhaps as many as 1000 Chinese advisers provide training and technical assistance in the deployment of the CSS-2 intermediate-range ballistic missiles which China shipped to Saudi Arabia in 1986 and 1987.[17]

However, Iran clearly stands out in the 1990s as China's most-favored client in the Middle East. China furnished large amounts of weaponry to Iran in the 1980s during the Iran-Iraq War, and their arms trade relationship continued beyond the cessation of that conflict. The major deals between China and Iran in the 1990s include the shipment of HQ-2B surface-to-air missile batteries and missiles, purchased for Iranian coastal defenses. In 1990, China delivered Hai Ying-2 ship-to-ship missiles (the HY-2, known in the West as the "Silkworm"), Iran's first purchase of the ship-launched version of this weapon. China also shipped F-7M Airguard fighter jets in 1992 to Iran, the first installment in a package expected to total 72 such aircraft. Such shipments are likely to continue unabated as evidenced by the January 1993 meeting between China's defense minister and the commander of Iran's Revolutionary Guards in which, among other matters, further Chinese arms exports were discussed, including the sale of Karakoram-8 jet trainers.[18]

In addition to direct arms transfers, the PRC in the 1990s maintained an active involvement in helping Iran develop its own military production capacity. Since 1986, Iran has

produced under Chinese license a version of the Chinese Type-83 artillery rocket, dubbed the Oghab by the Iranians.[19] In addition, China works closely with Teheran in the development of a wide-range of missiles and missile technology. Since 1989, China has provided technology and assistance to Iran in the development of a missile with a range of 130 kilometers (known currently as the Iran-130), while also assisting in the development of Iran's HY-2 and M series missile production facilities, and in the development of Iran's Tondar-68, a 1000 kilometer range missile.[20] In 1991, reports also surfaced alleging PRC-supported efforts to develop Iran's nuclear capability. According to U.S. Government experts and concerned international agencies, the nuclear technology transfer, meant for medical and scientific use, was not extensive enough by itself for Iran to develop a nuclear weapon. Yet the technology will allow Iran to restart its nuclear development program which was destroyed during the Iran-Iraq War.

Arms Transfers To Pakistan and South Asia. Largely due to China's strategic rivalry with India, the South Asia region has always remained a principal destination for Chinese weapons shipments. In this region, China has shipped weapons to Afghanistan, Nepal, Pakistan, and Sri Lanka. During the 1990s, Pakistan, Sri Lanka, and Bangladesh have been recipients of Chinese weaponry. Bangladesh, which as an important Chinese arms client throughout the 1980s received weaponry from the four major categories of PRC weapons exports (armor and artillery, aircraft, missiles, and naval vessels), received an unusually generous shipment of weapons from China in 1991 and 1992: A report in late 1992 states that the PRC replaced all naval vessels and aircraft destroyed by the cyclone which hit Bangladesh at the end of April 1991. In the storm, Bangladesh lost as many as 40 F-6 fighter aircraft (although the losses may have included more advanced Chinese F-7, A-5, and Soviet fighters), four torpedo craft (probably the Chinese Huchuan-class fast attack craft), six coastal patrol craft, and 3 frigates were seriously damaged (the Bangladesh navy included one Jianghu-class frigate).[21] It is a significant measure of China's interest in maintaining good

ties in this region that Beijing provided such extensive military equipment replacement for Bangladesh.

In the 1990s, China will continue its close military links with Pakistan, particularly in providing the necessary hardware, technology, and assistance for Pakistan to develop its indigenous weapons-producing capability, including ballistic missile production and a nuclear weapon capability. The relationship appears especially strong in light of the January 1990 signing of a 10-year memorandum of understanding between the two countries in the area of military cooperation. The agreement, calling for cooperation in R&D, coproduction arrangements, and technology, was signed by the Pakistan minister of state for defense and the head of China's Commission on Science, Technology, and Industry for National Defense (COSTIND), the state agency which oversees R&D and production for the PRC weapons industry. With regard to major weapons exports, in 1990 and 1991, China provided Pakistan with approximately 275 T-69 main battle tanks. At the end of 1992, Pakistan announced that China would supply three S-20 missile-armed submarines, one of which would be built in Pakistan.[22] In addition, since 1991 and as recently as May 1993, reports surfaced alleging that China provided Pakistan with M-11 missiles as well as technology and components for the development of such missiles in Pakistan.[23] Based upon admissions by the Chinese government, an agreement was reached between Pakistan and China on the M-11, and, in June 1991, the Chinese ambassador to the United States, Zhu Qizhen, stated, "We have sold some conventional weapons to Pakistan, including a tiny amount of short-range tactical missiles. I think here you call it M-11."[24] Yet, as of mid-93, this question was still open to speculation, though mounting evidence points to the transfer of M-11 missile technology to Pakistan.[25]

But rather than outright sales, China's most far-reaching arms-related assistance comes in nurturing the development of an indigenous weapons-producing capacity for Pakistan. With the help of the PRC, Pakistan's Kamra Aeronautical Complex will act as an aircraft refitting factory, capable of overhauling and refurbishing China's F-6, F-7, and A-5 Fantan

jets, as well as working on French Mirage fighters. Under joint Sino-Pakistani development, the complex is expected to begin manufacturing up to 120 Karakoram-8 advanced jet trainers as well as F-7 fighters, both of which will be made available for export to such countries as Iran, Libya, and Egypt.[26] In 1991, Pakistan opened up its first tank production facility, which, with the help of the PRC, will produce each year about 150 to 200 modernized versions of the Chinese T-69, upgraded to include a 105mm gun, laser range-finder, computerized fire-control system, and enhanced armor and engine strength. It is also expected that this plant will begin producing the most advanced Chinese main battle tank, the T-85, sometime in the mid-90s. Pakistan now touts an indigenous missile-production capacity with PRC assistance as well. These missiles include the Anza Mark-1 surface-to-air guided missile (developed from the Chinese HN-5); the Baktar Shikan antitank missile (developed from the Chinese Hong Jian-8 or Red Arrow-8); the Haft-2 surface-to-surface ballistic missile with a range of 400 kilometers (possibly developed from China's M-series missiles).[27] Sino-Pakistani military cooperation is summed up well by Pakistan's Chief of Army Staff General Mirza Aslam Beg: "The friendly country which is a common factor in almost all the major projects we have undertaken is China."[28]

Elsewhere in South Asia in the 1990s, China acted as a principal supplier of weapons to Sri Lanka, providing transport aircraft, a squadron of F-7M jet fighters, armor, artillery, and naval vessels.[29] Military analysts have also noted that China is currently turning to other parts of South Asia by entering into negotiations with several of the Central Asian republics to assist them in developing their indigenous military production capacity. An Indian intelligence report disclosed that some of the southern tier republics of the former Soviet Union are offering to supply China with Su-25 and MiG-29 aircraft in return for Chinese assistance in the development of their military production, as well the provision of large amounts of weapons of Soviet design, but upgraded by the Chinese with Western technology.[30]

Arms Transfers To Southeast Asia. In recent years, China's principal clients in Southeast Asia were Thailand and the

Khmer Rouge, but since 1990, Beijing has expanded its list of arms recipients in the region to include Laos and Burma as well. By the beginning of 1991, it was widely believed that China had halted its arms shipments to the Khmer Rouge, although not before supplying 24 T-59 main battle tanks to the Communist insurgents in late 1990.

The withdrawal of Vietnamese forces from Cambodia in 1989 has not contributed to a reduction in the level of the Beijing-Bangkok arms trade. Evidence of the two countries' solid arms trade relationship came in late January 1990, when Deng Xiaoping's son-in-law, He Ping, a high-ranking official dealing in weapons transfers, made an important trip to Bangkok to maintain the Sino-Thai arms trade connection. Indeed, for the year 1992, Thailand was China's largest arms client, accepting U.S. $534 million worth of Chinese weaponry.[31] In the 1990s, Chinese weapons deliveries to Thailand included 360 Type 531 armored personnel carriers, and the beginning of a large shipment of HN-5A portable, shoulder-fired surface-to-air missiles which will total 900 units when the shipment is complete. In February 1991, the Royal Thai Navy took delivery of one of four Jianghu-class frigates, with the remaining three to be delivered in 1992 and 1993. The Thais also ordered an additional two Jiangdong class frigates, scheduled for delivery in 1993. These frigates will each come armed with eight C-801 Ying Ji (Eagle Strike) antiship missiles, ordered in 1990.

Following the visit of a high-ranking Burmese military delegation to Beijing in 1990, the PRC began delivering weapons to Rangoon as part of a U.S. $1 billion arms deal. In 1990 and 1991, Chinese military transfers to Burma included ground-based radars, antiaircraft guns, small arms, and ammunition, in addition to 12 F-6 and 12 F-7M Airguard jet aircraft, two Y-12 troop transport planes, 30 T-63 light tanks, 50 T-69 main battle tanks, more than 100 PL-2A air-to-air missiles (arming the F-6 and F-7 aircraft), six patrol boats, and the arrival of PRC advisers and trainers, the first foreign military staff based in Burma in several decades.[32] Recent reports disclose that a new "Burma Road" under construction by the Chinese facilitates the transfer of lighter arms from China to

Burma, including rocket launchers, mortars, recoilless rifles, multiple rocket launchers, and spare parts. Plans are also in the works for China to build a munitions factory to produce semi-automatic rifles, assault rifles, light machine guns, and ammunition.[33] These figures show that even following the withdrawal of Vietnam from Cambodia, China maintained an active presence as an arms supplier to clients in Southeast Asia, especially to Burma and Thailand, providing a further illustration of China's abiding interest in the region so close to its borders.

To conclude this summary of Chinese arms trade activity, we recognize that China has been and will remain both an active and important player in the international arms market. China continues to play an important role not only as a supplier of arms, but more disturbingly, as a purveyor of advanced military technology and technical assistance. For example, by transferring missile technology and assistance in missile development, China thereby provides the recipient country with the capability to become an exporter of missiles, too. According to one well-informed researcher of Chinese missiles exports, "extensive Chinese missile cooperation with developing states—in terms of sales of whole systems and subsystems, production assistance and technology transfer—represents perhaps the world's most comprehensive program of providing missile know-how to such states."[34] Thus, the recent tendency on the part of Beijing to transfer certain types of technology, especially in the fields of missile and nuclear technology, threatens to become more pronounced in the future, and stands out as a principal challenge to American security interests. This important trend is given closer analysis in subsequent chapters.

CHAPTER 2

PATTERNS AND MOTIVATIONS IN CHINESE ARMS TRANSFERS

> China has a saying, "Only magistrates are allowed to light fires. Ordinary people are not allowed to light lamps." You are strong, so you can sell without constraint. We are not so strong, and we sell very much less.
>
> (former) PRC President General Yang Shangkun, responding to U.S. protests against Chinese arms sales, 1991[35]

Finding and isolating patterns over time within the complex whole of Chinese arms exports uncovers clues as to the motivations which drive Chinese arms exports. By discovering and understanding what motivates Chinese arms exports, realistic and viable policy responses can be formulated. Briefly stated, the patterns outlined in this chapter support two principal points: (1) With the express or tacit approval of China's highest-ranking leadership, the PRC actively and opportunistically focusses its shipments of increasingly advanced weapons, weapons technology, and military-related technical assistance to countries chiefly in the Middle East and Asia; (2) Chinese arms transfers are not driven primarily by the profit motive, but are mostly driven by a complex set of legitimate strategic and political considerations, as well as economic gain.

Patterns in Chinese Arms Transfers.

Recipients. By the end of 1990, Chinese major conventional weapons had been exported to more than 40 countries. Of these countries, 16 are in Asia, 16 are in Africa, 2 are in Europe, 2 are in South America, and 1 is in North America. These latter shipments to countries in the Americas came about in the late 1980s and early 1990s; before that time,

China had never exported weapons to any country outside of the developing world and Eastern Europe. As these numbers indicate, China has overwhelmingly devoted its arms transfers to countries on the Asian landmass (including the Middle East) and Africa. However, the numbers may be misleading, for they suggest a balance in Chinese arms exports between Asian recipients and African recipients. In fact, while the numbers of countries in Africa and on the Asian landmass which received Chinese weapons are equal, little else about the Sino-African and Sino-Asian arms trade relationship is comparable. Chinese arms exports clearly form a consistent pattern over time which shows they are shipped chiefly to two areas: (1) countries in Asia which border China or fall within 150 miles of its borders; (2) countries on the Persian Gulf.[36]

As an analysis of the statistical data in the appendices indicates, China's first major arms clients were its Asian neighbors North Korea and North Vietnam beginning in the 1950s, followed by Pakistan in the mid-60s. Then, for a period beginning in the late 1960s and expanding briefly in the early 1970s, China went beyond Asian clients, and exported weaponry to African nations, with Tanzania being the principal African recipient. The shipments to Africa were politically motivated, intended as they were to either wean African states away from reliance on either Soviet or American weapons, and to establish China as an active leader of the developing world. Since the mid-70s, however, China arms transfers have focussed almost entirely on areas on the Asian landmass, including the Middle East. For example, for the years 1950 to 1979, China shipped arms to 16 countries in Africa, while transferring weapons to only 6 countries in Asia. In the 1980s, however, the balance begins to change significantly. Over the period 1980 to 1984, China decreased its number of African clients, shipping weapons to 10 African states, but increased the number of its Asian clients, sending weapons to 8 Asian states. For the years 1985 to 1990, the trend becomes even more pronounced: China transferred weapons to just 4 African states, but 15 Asian states received weapons from the Chinese. Looking over the period 1950 to 1990 China shows only a brief interest in shipping arms to African countries, especially in the late-60s and early- to mid-70s.

Examining the data more closely, we find that many of China's African transactions were one-time affairs, or involved the transfer of materiel from just one of the four principal weapons categories which China exports (armor and artillery, aircraft, missiles, and naval vessels). Looking at the amount of weapons China shipped to African countries, it is clear that only Tanzania and Egypt rank at a relatively high level within Africa. For example, Tanzania received 70 tanks, 70 APCs, 318 artillery pieces, 58 fighter aircraft, and 14 naval vessels, numbers which place Tanzania as the largest recipient of Chinese weaponry in sub-Saharan Africa. Egypt is the only African state which received Chinese missiles, and in other categories—200 fighter aircraft, and nearly two dozen naval craft—ranks well above Tanzania. Overall then, shipments to Africa, particularly to sub-Saharan Africa, were relatively modest in quantity and diversity, with the notable exception of Tanzania. If we exclude Egypt from our analysis of Chinese arms supplies to Africa, preferring instead to consider Egypt within the Middle East region, then the figures for Chinese weapons shipped to Africa drop even lower.

Recent years have brought an even greater Chinese focus upon the Middle East and Asia in its arms transfer activities. In 1989, for example, China shipped weapons to 11 countries. Eight of them were in Asia and the Middle East (Afghanistan, Bangladesh, Iran, North Korea, North Yemen, Pakistan, Sri Lanka, and Thailand), and two of them, accounting for 5 percent of Chinese arms exports in 1989, were to African countries: Sudan and Zimbabwe. The other country was the United States, which received a total of 24 Chinese fighter aircraft for observation and training purposes. For the years 1990 and 1991, China shipped weapons to 12 different countries, of which 8 were in Asia and the Middle East (Bangladesh, Burma, Cambodia, Iran, Laos, Pakistan, Sri Lanka, and Thailand), 3 were in Africa (Algeria, Sudan, and Zimbabwe), and 1 was in South America (Peru). In 1992, China exported weapons to seven countries, only one of which (Algeria), was outside the Middle East or Asia. Taking the period 1989-92 together, PRC arms shipments to countries outside Asia and the Middle East (Algeria, Peru, Sudan, United States, Zimbabwe) accounted for less than 5 percent of

China's total arms exports for those years.[37] In sum, this analysis of the types of the recipients of PRC weapons clearly illustrates China's focus on countries close to China's periphery in Asia, or in areas of strategic significance such as the Middle East.

Types of Weaponry. Analyzing data on the types of weapons China exports is useful for two reasons. First, it can reveal the importance Beijing places in its relationship with the arms client: Those countries which receive the most diverse and highest quality array of weaponry are deemed important and worthy of widespread support by Beijing for their weapons and defense needs. Thus, those countries either allied or closely aligned with China, or which China perceives as important, should tend to receive a wider range of higher quality weapons from China.[38] Second, analyzing the types of weapons China exports reveals trends in the quality or level of sophistication of the weapons which China develops and provides to others. The analysis below indicates that China primarily focusses its arms transfers on the Middle East and Asia, and that China increasingly offers its most advanced weapons systems and technologies for export to these areas.

First, we consider the diversity of weaponry within each major conventional weapons category—armor/artillery, aircraft, missiles, naval vessels. The top three countries with the greatest diversity of Chinese missiles are Iran, Pakistan, and Thailand; Bangladesh, North Vietnam, and Pakistan have the most diverse mix of Chinese naval vessels; North Korea, Pakistan, and Cambodia have the greatest mix of Chinese aircraft. In the remaining category, armor and artillery, Tanzania received the widest range of weaponry from China, followed by Pakistan, North Korea, Iran, Iraq, and Thailand. Also, we should recall the earlier discussion of China's generous, comprehensive, and diverse replacement of aircraft (perhaps as many as 40 fighters) and naval vessels (perhaps 3-4 frigates and several patrol craft) for the Bangladesh armed forces as evidence of China's concern for maintaining ties with this South Asian nation. Second, we look to the quality or technical sophistication of weapon types. The only countries to have received the most advanced Chinese tank in full

production, the T-69, are Iran, Iraq, Thailand, Burma, and Pakistan. (Pakistan is also building, with Chinese aid, a factory to upgrade and produce large quantities of the T-69, and, eventually, the next generation Chinese tank, the T-85.) Of the countries which received the best Chinese APC, the Type 531, Thailand, Iraq, and Pakistan received the most. China's most advanced fighter aircraft, the F-7M Airguard, which is modified to include Western avionics and radar components, has been exported most to Pakistan, Iran, Bangladesh, Burma, Sri Lanka and Zimbabwe; a slightly better-armed variant of this aircraft, the F-7P Skybolt, has been sold to Pakistan. The next generation Chinese fighter jet, the F-8, currently under testing and development, has been made available as a prototype to Pakistan. Missiles, which represent some of China's latest and most sophisticated weapons technology, were received largely by Iran, Thailand, the Mujaheddin forces of Afghanistan, Iraq, Pakistan and Bangladesh. No other African country besides Egypt is known to have received Chinese missiles of any kind.

Looking at overall trends in the types of Chinese weapons exports, we find that before the 1980s, on a unit-by-unit basis, the category of weapons which has been most often exported by China are land-based weapons—tanks, APCs, artillery. Next, aircraft form the second largest export sector, followed by naval vessels. However, beginning in the mid-80s, missile exports grew to overtake land-based weapons in total units exported. More than half of the missile exports have gone to Iran, including Silkworm antiship missiles and Hong Jian-73 (Red Arrow-73) antitank missiles. The increased exports of missiles also indicate both market trends and Chinese efforts which combine to make PRC missiles more attractive to developing world clients.

Increasingly, China engages in a different kind of weapons export: the transfer of military-related technology and expertise. Again, looking at this type of export, a pattern emerges which features Middle Eastern and Asian clients, and China's increased willingness to part with technology of ever-greater sophistication. For example, in Iran, China helped in the development and production of the Oghab artillery rocket; it is widely suspected China is assisting Teheran to

develop its indigenous missile production capacity, and perhaps its nuclear capability. For Pakistan, China has helped establish a number of indigenous military production projects, including the production of T-59, T-69, and, in the future, the T-85 main battle tanks, the HJ-8 antitank missile, and technical and material assistance in the development of Pakistan's missile and nuclear capability. Beginning in the 1970s, China began assisting North Korea in the development of the HY-2 missile, as well as other missile development programs, however it is unclear how extensive this program has been. A Sino-Thai joint production agreement signed in January 1989 envisions a Thai facility created for the licensed production of Chinese armored personnel vehicles, and possibly for the T-69 tank as well. A number of reports suggest that China and Egypt are working together in the development of the latter's missile production capability. It has also been revealed that Beijing, as part of its growing arms trade relationship with Rangoon, would assist Burma in the construction of a munitions and rifle factory. Today, and in the future, Chinese technical assistance and technology transfer programs to countries in the Middle East and Asia mark Beijing's strengthening interest and ties in these regions.

With regard to China's interest in the Middle East and Asia, special note should be given to reports stating that such countries as Saudi Arabia, Libya, Syria, and Pakistan have funded the research and development of Chinese weapons systems, particularly the development of the M-series missiles. These reports are difficult to confirm, are often in conflict with one another, and, in some cases, are discounted by observers. However, it is widely noted in the available literature that Syria provided financing for the development of the M-9 system as early as 1987, including a down payment on the first order.[39] Also, in the Syrian M-9 missile transaction, Libya, Pakistan and Saudi Arabia have each been cited at different times as providing funding for the deal.[40] Some experts on Chinese missile proliferation question whether Pakistan was involved in financing the development of the M-11.[41] The Bank of Credit and Commerce International (BCCI) was also involved in financing Chinese arms sales to the Middle East.[42] This line of argument would suggest that China will remain interested in

Middle East clients for two reasons: they are engaged in an arms race driven by regional tensions; many of them are oil-rich states able to offer hard currency or natural resources or both as a form of payment for the weapons.[43]

Taken together, these developments suggest a strong Chinese interest in the Middle East and Asia. By looking at what kind of weapons China is shipping, and gauging their export by their diversity, their quantity, and their quality, certain export destinations consistently appear: Egypt, Iran, and Iraq in the Middle East, and Bangladesh, Burma, North Korea, Pakistan, and Thailand in Asia. In finding patterns of where Chinese weapons go, it becomes increasingly clear that the Chinese tend to focus on countries on the Asian landmass, and particularly on countries close to China, or on countries in a strategically sensitive area such as the Middle East and Persian Gulf region.

Timing of Arms Transfers. In the past, Chinese arms transfers often occurred as a reaction and defense to perceived threats at or around China's borders, and particularly to threats seen emanating from the superpowers. For example, Chinese weapons transfers increased significantly in seven periods since 1951: the early 1950s, 1958-59, 1966-67, 1971-75, 1977-80, 1982-87, and 1989-91. With the exception of the periods 1958-59 and the periods since 1982, the growth in Chinese weapons exports responded to an external threat to Chinese security, either from the United States (1950s and 1960s), the Soviet Union (in the 1970s and early 1980s), or their client states. Beginning in the early 1980s, and continuing in the post-cold war period, China's threat perceptions cannot be placed so neatly into a bipolar framework, while at the same time the power of the former Soviet Union and the United States in Asia does not directly threaten the PRC as in the past.

Instead, in a more fluid and multipolar international security environment, China finds itself in a more flexible position which will allow greater assertiveness and initiative, especially with regard to its aims as a regional power in Asia. Since the early 1980s, the timing of China's arms exports has been more opportunistic in three ways in particular. China has shipped weapons and weapons technology when other suppliers have

withdrawn or withheld certain weapons (i.e. North Korea, Pakistan, Saudi Arabia, Syria, Thailand), when international political considerations discouraged arms shipments to some countries (i.e. Burma, Iran, North Korea, Syria), or when lucrative opportunities arose (i.e. during the Iran-Iraq War). Thus, the past pattern of reactive and defensive arms transfers underwent a significant change in the 1980s. PRC arms transfers may be characterized as active initiatives to promote a complex mix of strategic, political and economic interests and not so much as reactive measures to counter a perceived strategic or ideological threat. As with previous patterns developed here, China's more active approach to arms exports focusses almost entirely upon clients in the Middle East and Asia, and is increasingly characterized by the export of more sophisticated weaponry such as missiles and missile technology.

Source of Weapons Exports. Early Chinese arms exports in the 1950s and 1960s were directed by China's central leadership, and were viewed as a tool to help in the construction and implementation of China's strategic and diplomatic policy. However, with the great upheavals of the Cultural Revolution (1966-76) and the post-1979 reform era, the structure of the party, the government, and the military were greatly disrupted, as was the hierarchy concerned with arms exports. Briefly stated, the Chinese arms export agents and companies, while under the official direction of the government's Central Military Commission and the State Council, have become more independent from official government strictures and control, and instead rely more heavily on loyalty networks and connections with the country's top leadership for the authority to conclude arms transfers.[44] John Lewis and his associates argue that this situation raises doubts about the source of Chinese weapons exports, and especially presents difficulties for American policymakers wishing to curb Chinese arms exports: Since the source of authority on arms transactions is not clear, it is difficult to know where pressure should be placed to curtail those transactions.

However, these difficulties are not so complex as they may seem. Observers of Chinese politics have known for years that

policy formulation in China is not necessarily developed and approved within the traditional government agencies and ministries, but rather often takes place within the closely-knit personal loyalty networks of China's top leaders, especially with regard to highly important or sensitive issues. This is no less true for arms transfers, which John Lewis and his associates acknowledge. In fact, because the arms export and military bureaucracy is so well-connected to the top Chinese leadership, these leaders may exercise an even greater control and authority over the development and conduct of arms exports than they do over other parts of the enormous Chinese bureaucratic structure.

For example, leaders of the two principal weapons export corporations, Poly Technologies and New Era (Xinshidai), are closely related to top Chinese leaders. Formed in 1983, Poly Technologies has greater authority and influence in the arms trade bureaucracy due to more direct ties to PRC's top leaders, and it is more active in its exports than New Era. He Ping, former president of Poly Technologies, is the son-in-law of Deng Xiaoping. Wang Xiaochao, the son-in-law of the military leader and former PRC President General Yang Shangkun, is the executive vice president of the corporation, while one of Yang's daughter's, Yang Li, is a vice president in the firm. Other relatives of top leaders, such as the son-in-law of the former Chinese Vice President Wang Zhen, are also officers in Poly Technologies. Poly Technologies is under the jurisdiction of the People's Liberation Army General Staff. The former Chief of the PLA General Staff, and now member of the PRC Central Military Commission, the Party Central Military Commission, and Minister of Defense, General Chi Haotian, is the son-in-law of Yang Shangkun. Xu Huizi, Deputy Chief of Staff and member of the Party Central Committee is well connected to China's central leaders as he is the son of the late Marshal Xu Xiangqian, one of the PRC's great military heroes, former member of the Politburo, and Vice Chairman of the Party's Central Military Commission. He Pengfei (no relation to He Ping), formerly the director of Poly Technologies, headed the Equipment and Technology Department in the late 1980s, the branch of the military's General Staff which specifically oversees the activities of Poly Technologies; he is the son of

one of the PRC's leading military figures, the late Marshal He Long. He Ping, Deng Xiaoping's son-in-law, is believed to have taken over as deputy director at the Equipment and Technology Department in 1989.

The other major weapons export corporation, New Era, is overseen by the State Commission of Science, Technology, and Industry for National Defense (COSTIND). COSTIND serves as a coordinating body on arms exports to bring together the military's General Staff Department and the government's Ministry of Foreign Affairs. However, while the Ministry in recent years has attempted to assert greater influence over arms exports, the General Staff and COSTIND have a greater voice on these matters. The head of COSTIND since 1985, Ding Henggao, is himself within the upper ranks of the Chinese leadership as a member of the Party's Central Committee, and is the son-in-law of another one of the PRC's greatest military leaders, the late Marshal Nie Rongzhen. Ding's wife, Nie Li, is one of the vice ministers of COSTIND.[45]

So, while the structure of the arms export bureaucracy has loosened and become less centralized, it is not at all clear that these agencies run independently of China's top leaders. To suggest that Chinese arms exports are run by quasi-independent agencies with little or no responsibility or accountability to the central leadership of China would be an exaggeration. Most decisions to export arms, and certainly all important and sensitive arms export decisions, are either tacitly or expressly approved by the same persons at the top of China's leadership hierarchy who develop and approve China's overall policies on international relations and strategy.

Motivations.

Goals or motivations behind arms transfers fall into four principal categories: enhancing strategic interests, projecting political influence, securing economic profit, and gaining international prestige. From the several patterns illustrated above, we can see that China is principally motivated to provide arms to recipients based upon a complex mix of geopolitical considerations of strategic interest and political influence, as

well as economic interests. The goals of enhancing strategic interests and projecting political influence stand out as the dominant motivations behind PRC arms exports over time, and especially for the period beginning in the 1950s and carrying on through the 1970s. During this period, Chinese arms exports were offered as outright gifts to its clients in the developing world, meaning the goal of securing economic profits from arms sales was not a factor. But, with the advent of Deng's reforms and the push for economic modernization, the military was forced to accept cut backs in troops and budgets, while at the same time asked to develop income-generating activities. As one response to these developments, the PRC military organs responsible for the production and export of weapons began to sell them in order to make money. Yet, to say that Chinese arms sales are driven by a purely economic motive, or simple greed, lacks depth and subtlety. Even worse, such an understanding diverts attention from the underlying security or political calculus which motivates certain arms transfers. Statements which suggest that China is a "rogue elephant, supplying arms virtually without consideration of political or security implications"; that "arms sales are essentially a business decision" for Beijing leaders; that China's "arms sales of the 1980s. . .were designed purely for profit" or that "if ever there was a pattern of nonexploitive and subtle Chinese aid, it certainly has ceased to exist in recent times" only tell part of the story and are misleading.[46] In the words of one Chinese official concerned with the arms trade, "China expects a profit from those who can afford to pay, payment at cost for friends who can afford it, and payment well below cost for those who cannot." His comments reveal that economic motives are often not a consideration at all.[47] In fact, Chinese arms transfers are not driven exclusively or even primarily by pure and simple economic motives. More insightful is the view that behind Chinese arms transfers is a mixture of motivations, often having to do with strategic and political considerations.

A brief look at China's principal arms recipients since the advent of Deng's reform movement supports this contention. China's arms exports to Pakistan and Thailand, provided at "friendship prices"—either at cost, well below cost, or free of

charge—were not offered for economic reasons, but rather for strategic purposes of bolstering friends against a mutual enemy (Pakistan vs. India, Thailand vs. Vietnam), and to extend Chinese political influence in South and Southeast Asia, respectively. Beijing's arms exports to Burma, which began in 1989, also demonstrate Beijing's efforts to project its regional influence through arms transfers. One diplomat in Rangoon went so far as to say that "Today, China controls Burma economically, militarily and politically."[48]

The 1986-87 sale of CSS-2 ballistic missiles to Saudi Arabia has paid off far more handsomely for Beijing in political and strategic terms than the economic impact of the U.S. $1.5 billion sale. For China the sale helped to gain the political and strategic benefits of subsequent diplomatic recognition from Riyadh, the continuing presence of Chinese military advisers and technicians in Saudi Arabia, and Riyadh's recognition of China as a Great Power patron in the region. According to some observers, the CSS-2 sale (and the prospect of more missile sales to Arab states) served to quicken Israel's military-related cooperation with the PRC, which now extends into avionics upgrade packages, the development of improved artillery and ammunition, and missile technology, including the possible transfer of Patriot technology to China.[49]

In the case of Chinese arms sales to Iran and Iraq during the mid-80s, observers argued that only a power motivated by greed would sell weapons to *both* sides of a war. Yet, providing weapons to both sides of the Iran-Iraq War, while indeed a lucrative venture for Chinese arms exports, also helped to assure that China was the only major power on friendly terms with both sides at the end of hostilities. In fact, China continued selling weaponry to Iran and Iraq after the war (stopping its arms shipments to Iraq following the Iraqi invasion of Kuwait) and continues large-scale arms shipments to Iran, all the while further strengthening its political and military ties with Teheran. The PRC interest in the Persian Gulf region and the Middle East overall is well-documented and forms an important aspect of China's assertions to regional and continental power.[50] Thus, Chinese arms exports to the Middle East and elsewhere

are not simply business deals, but form a part of Beijing's overall strategic and political policy.

These points should not discount the importance of hard currency in the minds of Chinese decision makers exporting arms. Rather, these points are presented to stress the interrelated nature of motivations behind arms exports. The generation of hard currency—the economic motive—results in the investment of funds in defense-related projects, providing a supplement to military budgets. Over the long term, this benefits China's strategic and political goals. So, while economic gain may be an immediate and easily recognizable benefit to accrue from some arms transfers, they are best seen as a part of a larger web which includes strategic and political interests as well.

One of the best-known American scholars of the arms trade, Andrew J. Pierre, writes, "Arms sales are far more than an economic occurrence, a military relationship, or an arms control challenge—arms sales are foreign policy writ large."[51] This is equally true for China, and as such we must acknowledge that arms transfers are viewed by leaders in Beijing as the legitimate conduct of a sovereign nation in pursuit of its interests.

CHAPTER 3

THE PRINCIPAL THREAT: CHINESE EXPORTS OF ADVANCED TECHNOLOGIES

> There are many countries which sell weapons to other countries. However, when China sells weapons. . .why is it that some people always harass China with this so-called issue?
>
> (former) PRC Foreign Minister Wu Xueqian, 1988[52]

American interests are threatened by the proliferation of Chinese weapons and weapons technologies, and especially those of a more advanced or destructive nature such as missiles and nuclear technology. Yet the Chinese leadership regards arms transfers as a crucial aspect of PRC international relations and security policy, and hence they can only be extremely reluctant to accept restraints on arms exports which run counter to PRC interests. Thus, American policymakers and security planners must accept that the United States is limited in what it can do to confront the problem of Chinese arms exports. A focussed and realistic policy of "targeted management" must be formulated and implemented in the areas of military planning, U.S.-PRC relations, and at a multilateral level.

This policy recognizes the principal threat to be the proliferation of Chinese advanced weapons and weapons systems such as missiles, nuclear technology, and technical assistance. It calls on U.S. policymakers to respond with the development of antitactical ballistic missile systems, the limitation of military-related trade activity with the PRC, the intensification of efforts to conduct constructive dialogue at several levels of the Chinese arms export establishment, the tolerance and even encouragement of certain PRC arms

exports, and the strengthening of pertinent international regimes and agreements. However, before detailing the policy of targeted management, this chapter will first describe the principal challenges which such a policy must confront.

Development and Deployment of Advanced Weapons Technologies.

The vast majority of Chinese arms which presently stock the arsenals of developing countries do not pose a significant threat to the United States in the short term. This is due to two principal factors: the weapons mix of potential American adversaries on the one hand, and the deterrent effect of technologically superior weaponry often deployed against Chinese-made weapons on the other. Countries which possess Chinese weapons and which may be destabilizing or threatening to American interests—Iran, Iraq, Pakistan, North Korea, Syria—also maintain as part of their arsenals large numbers of weapons of far superior quality imported from other suppliers.[53] These superior weapons pose a greater threat than Chinese arms, and are more likely to be used in a conflict with the United States. Iran stands out as an exception, which since the early 1980s and until recently has relied almost entirely upon China and North Korea in maintaining and rearming its military forces. But, these forces do not pose a serious threat to the United States in the near term. Indeed, a deterrent effect—especially the threat of a technically superior and vastly more devastating retaliation on the part of the United States—is likely to prevail in preventing countries such as Iran from using Chinese weapons contrary to American interests. Briefly put, the foreseeable adversaries for the countries in question (Iran vs. Iraq; Iraq vs. Israel/U.S.; Pakistan vs. India; North Korea vs. South Korea/U.S.; Syria vs. Israel/U.S.) deploy forces which are more powerful and technologically advanced than Chinese weaponry. For these reasons, Chinese weapons currently deployed abroad do not present the United States with a significant security risk *in the near term.*

Nevertheless, it remains possible that potential adversaries of the United States would use Chinese arms against American interests and American forces. The only recent situation in

which the United States faced a direct offensive threat from an adversary armed with Chinese weapons was against Iraq in the 1991 Persian Gulf War. For the most part, Iraq's front-line troops were not armed with Chinese weapons, except for the 130mm Type 59-1 field gun (a heavy artillery piece with updated 1950s Soviet technology).[54] In the one instance where allied forces were directly confronted by a Chinese weapon system—the firing by Iraq of a Chinese-exported HY-2 ("Silkworm") missile against the U.S. battleship Missouri—a British Sea Dart missile destroyed the attacking Silkworm. (In fact, the American-led coalition destroyed nearly all of Iraq's Silkworm missiles on the ground during the war.[55]) Though this Silkworm incident was a one-time affair, it represents a widely-held understanding among military analysts that Chinese weaponry as presently deployed abroad, for the most part based on technology from the 1950s and 1960s and best suited for a defensive or deterrent role, poses little direct offensive threat to American security at the present time.

Washington is limited in its ability to prevent the continued export from China of such conventional weapons as tanks and artillery, and other weapons such as the F-6 or F-7 aircraft, or Chinese naval vessels. In any event, the Western display of high-tech military force in the war against Iraq, and the availability of sophisticated weaponry from Russia and the Commonwealth of Independent States may signal a decline in the export of such traditional and outdated Chinese arms exports. Nevertheless, no instance of regional destabilization or the outbreak of war can be attributed to the export of these types of weapons; arguably, Chinese exports of this type can be said to have provided some stability and balance to regional hot spots (Chinese arms exports to Pakistan and Thailand, for example). Thus, Washington should not expend what leverage it may have in its dealings with Beijing over weapons transfers which should not be seen as destabilizing or directly threatening to the United States in the short term. Instead, the policy of targeted management must try to address the much more pressing and disturbing middle-term developments which will unfold over the next 5-10 years in the proliferation of Chinese missile and nuclear technology and technical assistance.

The Threat of Advanced Technology Exports. China has been or is recently active in providing missiles, missile technology, nuclear technology, or technical assistance to a number of countries in the Middle East and Asia: Algeria, Egypt, Syria, Saudi Arabia, Iran, Pakistan, and North Korea. Over the next 5-10 years, these weapons—unlike the traditional weapons exports described above—will increasingly hold the potential to present the United States with serious security problems. In volatile areas such as the Middle East, in and around the Persian Gulf, on the Asian subcontinent, and on the Korean peninsula, the presence of more advanced and offensive weapons have the potential of threatening the security of the United States in three principal ways. First, American allies and friends may be threatened with attack and war, including Israel, friendly states on the Arabian peninsula, and South Korea. Second, American security interests may be threatened more directly including access to the Persian Gulf and the security of the American military presence in and around the Persian Gulf and on the Korean peninsula. Third, bilateral rivalries—such as Syria vs. Israel, Iraq vs. Israel, Iran vs. Iraq, Iran vs. Saudi Arabia, Pakistan vs. India—can expand rapidly to become region-wide conflicts, drawing in outside powers and affecting the United States by causing strategic, political, and economic instability and destruction in the regions at war. In each of these threat scenarios, the United States would be obliged to respond both diplomatically and militarily in ways which would further entangle American interests—perhaps disadvantageously or even dangerously so—in the outcomes of regional rivalries. For these reasons, U.S. security planners and policymakers must understand and respond to the middle-term impact of Chinese arms exports.

Missiles and Missile Technology. PRC-exported missiles come in two types: direct transfers of missiles to Chinese clients, and the transfer of technology and assistance meant to help clients develop their own indigenous capacity to produce and deploy missiles. The former type of missile exports by China outnumber the latter at present. But the latter form of missile exports holds the greatest potential for future risk to U.S. security, because, while it may be possible to

convince Beijing to limit or even halt its direct exports, it is a much more difficult matter to control technology transfer, and even more difficult if not impossible to prevent the post-transfer indigenous development of missile systems by Chinese clients. In turn, these clients could then become missile-exporting states themselves.

Most missiles directly exported by China are basically defensive in nature, and provide coastal and air defense for the recipients. Examples of these kind of weapons would be the Silkworm and other antiship missiles shipped to Iran, Iraq, Egypt and North Korea, and the HQ-2 surface-to-air missile systems exported to Iran, Thailand, and Pakistan. However, Saudi Arabia possesses ballistic missiles from China. In addition, a mounting collection of evidence suggests that Pakistan also possesses Chinese ballistic missiles.[56] Syria also has attempted to import ballistic missiles from China, but it remains unclear if China has exported complete missile systems, or only missile-use technology. Considering their longer ranges, the difficulty of intercepting such missiles, and their potential to carry chemical, biological, or nuclear warheads, ballistic missiles present a much more serious threat to American security interests, especially in the Middle East, South Asia, and on the Korean peninsula.

More troublesome however is the steady and ongoing transfer of PRC missile technology and technical assistance to China's clients in Asia and the Middle East. The export of Chinese missiles and technical assistance "represents the world's most comprehensive programme of transfer of missile technology."[57] These types of transfers allow for the development of many more missile-armed countries, located in volatile parts of the Middle East and Asia, and which are often seen as potential adversaries of the United States. Of the 24 developing world countries believed to be developing or in possession of ballistic missiles and technology, 8 are Western friends or allies which are ballistic missile states with the compliance or cooperation of the United States or other Western nations. Of the remaining 16 countries, 6 have received and continue to receive assistance and materiel from China in the development of their ballistic missile capability:

Egypt, Iran, North Korea, Pakistan, Saudi Arabia, and Syria.[58] A seventh country, Libya, has in the past attempted to buy PRC ballistic missiles, including the CSS-2 (such as those sold to Saudi Arabia) and M-series missiles; thus far, China has not offered these weapons to the Libyan regime.[59]

Chinese-aided missile development programs in the Middle East and in Asia demand closer scrutiny. Chinese assistance in the development of North Korea's missile has been passed on to Egypt as a part of close Egyptian-North Korean cooperation in missile production efforts.[60] In addition, China and Egypt signed a protocol in June 1990 reportedly worth several hundred million British pounds governing the joint development of Egypt's missile production capability. Under the agreement, China will assist Egypt in the development of surface-to-air missiles and antiship ("Silkworm") missiles, as well as an upgraded Scud-B surface-to-surface missile with a range of 500 kilometers. This agreement is notable because, along with the ability to produce several Western missile systems, the Chinese package gives Egypt "the most diversified missile production capacity in the Middle East."[61]

Sino-Iranian cooperation in missile development appears quite extensive as well. The PRC has assisted Iran in the development of its solid fuel 130 kilometer range ballistic missile, dubbed the Iran-130 in the West, though reportedly Iran was already well-advanced in the development of this missile before Chinese assistance began. The Iran-130 is now being produced and deployed by Iran, and was used against the Iraqis in 1988.[62] Another short-range missile, the so-called 8610, was reportedly exported to Iran in 1990.[63] Furthermore, China is providing extensive help to Iran in the construction of wide range of missiles—antiship missiles (the "Silkworm"), artillery rockets (the "Oghab"), and M-series missiles—at a number of production facilities in Iran. This factory at Ishfahan produces ballistic missiles with Chinese assistance, including the M-9 and M-11.[64] Along with the development of missile systems, China also assists Iran in the production of solid-fuel propellant for the missiles.[65] In addition, China supplies assistance and technology in the development of a number of other ballistic missiles for Iran which are comparable to Iraq's

longer-range Scud type missiles. Following a PRC-Iran agreement reached in 1988, China offered to provide technology, training, and advisors to Iran for the development of medium-range missiles with ranges up to 1000 kilometers. This assistance will help Iran develop missiles similar to the Iraqi Al Hussein and Al Abbas missiles, with ranges of up to 600 kilometers and 900 kilometers, respectively.[66] Iran's quest to develop an even longer range ballistic missile, with ranges of over 1000 kilometers, is believed to be receiving assistance from China as well.[67] Thus, assurances made by the Chinese foreign minister in mid-93 that China is not selling missiles to Iran may be understood to mean that China is not selling complete missile systems, while technology and other forms of Chinese assistance continue to flow toward the development of Iran's missile production program.[68]

The Saudi purchase of Chinese intermediate-range CSS-2 ballistic missiles gave Riyadh the most powerful ballistic missiles in the developing world: with a range of 2800 to 3500 kilometers and a payload capacity of 2200 kilograms, the CSS-2 can hit targets throughout the Middle East, as well as in Turkey, India, and southern portions of the former Soviet Union.[69] But in addition to the direct sale of the CSS-2s, China supplies technical assistance to construct launch sites, to train operators and technicians, and to provide maintenance. As part of this arrangement, American and other Western observers and officials are barred from the CSS-2 bases, and Beijing and Saudi Arabia have set up coded telecommunications links to communicate with one another.[70] The number of Chinese technicians and advisers was estimated by the Defense Intelligence Agency to be as high as 1000 persons.[71] At the same time Pakistani technicians are receiving training and garner technical information at the CSS-2 sites.[72] With regard to Chinese missile-related assistance to Saudi Arabia, two disturbing, but unconfirmed reports require close attention: one report, quoting intelligence sources, states that Riyadh attempted to gain access to chemical and nuclear warheads from China between August and December 1990; the other report claims that China assisted Saudi Arabia develop chemical warheads for the CSS-2 missiles.[73] Such reports serve as ominous reminders

of future threat scenarios fueled by China's extensive missile export program.

In the case of Syria, a great deal of uncertainty exists as to the exact extent and nature of Chinese missile-related exports and assistance. Most attention has centered upon the alleged export of the M-9 missile, a single-stage, solid-fuel surface-to-surface ballistic missile with a range of 600 kilometers and a payload capacity of 500 kilograms. In question is whether China has provided complete M-9 systems to Syria, or assistance in the development of Syria's capacity to endogenously produce the M-9, or bits and pieces of technology related to the M-9 and missile production, or whether all of these scenarios have come about to some extent. Since 1987 when Syria and China first discussed the M-9 transfer, reports have surfaced that Syria was in possession of M-9 missiles and/or launchers or other missiles from China.[74] However, subsequent reports suggest that while China agreed in 1989 to ship M-9s to Syria, the deal was put on hold probably as a result of U.S. pressure.[75] Thus, China does not appear to have shipped any complete missile systems to the Syrians. But, nevertheless, Sino-Syrian cooperation in missile technology transfer is significant. In 1991 and 1992, China exported to Syria large shipments of chemicals used in the production solid missile propellant, enough to fuel as many as 70 M-9 missiles.[76] Reports also describe a number of exchanges between the two countries of officials and experts connected with missile production and sales.[77] In addition to the bilateral cooperation described here, observers must also note how Syria, as a "third party," benefits from Chinese missile assistance to other countries such as North Korea, Egypt, and Iran, all of which are able to pass along such know-how as part of their involvement in missile-related collaboration with Syria.[78] There is little doubt that Syria intends to develop and deploy M-series missiles from China, and with Chinese-assistance, Syria is expected to produce its own version of the M-9 in 2-3 years.[79] Again, while China may not be providing complete systems to Syria, it has been instrumental in providing either direct or indirect missile-related assistance. Thus, China has been able to make good on the letter of its pledges not to sell such missiles, but circumvents

the spirit of its commitments by providing technology, technical assistance, and components for missile development in Syria.[80]

Outside the Middle East, China actively assists the missile development programs of North Korea and Pakistan. North Korea stands out as a principal and long-term recipient of Chinese assistance on missile development, aid which helped North Korea become an independent producer and exporter of missiles and missile technology. Chinese aid to North Korea in this realm began in the early 1970s, and resulted, most prominently, in the North Korean version of the Soviet Scud missile.[81] With Chinese assistance, including rocket engine technology and guidance components, the North Koreans developed and now export an upgraded version of the Scud, known as the Scud-Mod B or Scud-C, with a 300 kilometer range and a payload capacity of 500 kilograms.[82] Hundreds of these modified versions of the Scud missile have been exported from North Korea, mostly to Iran, to Syria, and to Egypt as well. China and North Korea are also working together to help Iran develop its missile-producing capability.[83] In a tangled web of exports, reexports and technical assistance, it is possible that the upgraded and more powerful Scuds possessed by Iraq (the Al Hussein and Al Abbas) arrived from Egypt after being developed with the cooperation of China and North Korea.

Concerning Pakistan, the other principal Asian recipient of PRC missile technology, Chinese assistance involves the transfer of M-series missile technology and help in the indigenous development of Pakistan's Haft missiles. In the late 1980s, China began providing assistance to Pakistan in the development of its medium-range surface-to-surface Haft missiles. The Haft program consists of at least three models: the Haft I is a short-range (80 kilometers) rocket; reports also state that Pakistan has developed an upgraded version of the Haft I with a 100 kilometer range and greater accuracy.[84] The Haft II is a medium-range (300 to 400 kilometer) missile which is similar in character to the Chinese M-11. The Haft III may be the name given by the Pakistanis to the M-11, either as a direct import from China, or as part of a co-production agreement.[85]

However, it is more likely that the Chinese-assisted Haft III program is developing a longer-range missile (600 kilometers), akin to the Chinese M-9.[86] Beginning in early 1991, numerous reports alleged that Pakistan had deployed M-11 launchers, a charge which the Chinese denied.[87] However, the Chinese did admit in June 1991 that they had exported a "very small number of short-range tactical missiles" to Pakistan.[88] In acknowledging the export of these weapons, the Chinese ambassador to the United States said they were the M-11,[89] but insisted they were "short-range" and that their export therefore did not violate the Missile Technology Control Regime. According to Indian sources, by August 1991 Pakistan had deployed some 60 M-11 missiles, and Pakistan had received the longer-range M-9 missiles from China as well.[90] Then, at the end of 1992, allegations surfaced citing U.S. officials and intelligence sources that China had exported two dozen complete M-11 systems to Pakistan, but some reports stated that China had transferred missile technology, and not whole missiles.[91] In mid-1993, reports noted an accumulation of "compelling evidence" based on satellite photography and other sources that China has exported M-11 missile technology and components to Pakistan since at least the beginning of 1993 if not earlier.[92] Both Pakistan and China have denied these reports, asserting that China has acted in accordance with the parameters of the Missile Technology Control Regime.[93] These reports of technology transfer make sense in light of the Sino-Pakistani agreement on the M-11, a part of which stipulated that the two countries intended to establish a co-production arrangement whereby some of the missiles would be produced in Pakistan.[94] Furthermore, *Jane's* reports that Pakistan, with China's assistance, has developed and tested a "space research launcher" with an altitude range of 450 kilometers; this achievement can contribute to the development of Pakistani ballistic missiles with ranges in excess of 1000 kilometers.[95] There remain some questions about the exact extent and nature of China's missile and missile technology exports to Pakistan. However, it is clear that China's assistance makes valuable contributions to Pakistan's missile development program, whether through direct exports of complete systems or, to avoid sanctions or reprimands from

Washington, through the export of subsystems and through various training and technical assistance programs.

There has been some speculation about Chinese technical assistance in the missile development programs of other countries including Libya and Iraq, though this has not been fully confirmed. China sold over 100 C-601 antiship missiles to Iraq in 1990 and 1991, and a joint liquid propellant testing facility was to be set up in the late 1980s.[96] In addition, it is possible that the development of Iraq's medium- to long-range missile capability, which by 1990 had reached the point where Iraq was able to launch a satellite, may be traced in part to Chinese technology.[97] However with the Iraqi invasion of Kuwait in August 1990, any further Chinese assistance on these programs apparently came to a halt. As for Libya, it appears China is extremely reluctant to provide direct assistance to Qaddafi, who reportedly has tried to buy both the CSS-2 and M-series missiles, as well as provide financing for the purchase of M-9s by Syria.[98] But Beijing may turn a blind eye if missile technology from China were reexported to Libya via Iran, North Korea or Syria.

In addition to the known export programs of missiles and missile technology, China continues to develop more sophisticated missile systems, many of which are designed for export in the near future. For example, a new generation of antiship missiles will soon surpass the Silkworm missile family. These missiles, known as the C-101 and HY-3 (or C-301), are presently under development, but are expected to be in service and ready for export shortly after 1995. Travelling at supersonic speeds of up to Mach 2, respectively carrying 300 kilogram and 500 kilogram warheads, and with respective ranges of approximately 45 and 180 kilometers, these missiles will present a much more serious threat to military and commercial shipping than the Silkworm or Scud missiles.[99] As for ballistic missiles, the Chinese continue to develop systems for export such as the surface-to-surface missile known as the 8610. Developed from the HQ-2 surface-to-air missile, the 8610 has a range of up to 300 kilometers and can carry a 550 kilogram warhead. This missile has reportedly been exported to Iran.[100] In addition, two other M-series missiles, the M-7 and M-18, are

also under development for export. These missiles reportedly have ranges between 80 and 600 kilometers.[101] In short, China will remain a prominent exporter of missiles and missile technology, and probably sees this portion of the arms market as a place into which it can carve a lucrative position for strategic, political and economic gain in the future.

Transfer of Nuclear Technology. China makes significant contributions to the nuclear development programs of several states, some of which are hostile to the United States, and all of which are seeking to possess nuclear weapons.[102] In Algeria and Iran, Chinese assistance has included the development of nuclear reactors, ostensibly designed for peaceful purposes, but which raise questions about the recipient country's ultimate intentions. The Algerian reactor, made public after discovery by U.S. intelligence services in April 1991, is a 15 megawatt facility—deemed too small for electricity production, and too large for research, but of a size to produce enough plutonium for two bombs every 3 years; with upgrading, the reactor could produce two bombs per year. The reactor is expected to be inaugurated in 1993.[103] In Iran, it was revealed in October 1991 that based on 1989 and 1991 agreements, the PRC supplied Teheran with nuclear technology—a small reactor and a separator for the production of radioactive isotopes—for medical and nuclear physics research and training. While this reactor probably cannot produce nuclear weapons, it does give Iran the opportunity to restart its fledgling nuclear development program which was destroyed during the Iran-Iraq War.[104] More recently, Sino-Iranian nuclear cooperation made another stride forward when the two countries disclosed in September 1992 that China would supply Iran with a 300-megawatt nuclear research reactor.[105] The reactor will be placed under International Atomic Energy Agency safeguards and inspections, but Western analysts express concern that this large-scale transfer of nuclear equipment and expertise from China to Iran will further hasten Iran's development of a nuclear weapon. In early 1993, U.S. CIA Director R. James Woolsey cited China as Iran's most important source of nuclear technology, saying these transfers cause concern given Iran's quest for a nuclear weapon.[106]

At the end of 1992, ground was broken for the joint Sino-Pakistani construction of a 300 megawatt nuclear reactor, intended to be an electric power plant. This agreement is just one in a long history of PRC-Pakistan cooperation in nuclear development.[107] With the Chinese provision of designs, uranium, and the opportunity to test nuclear devices on Chinese soil, it is now widely believed that Pakistan holds several workable nuclear bombs in its possession.[108] Without Chinese help, Pakistan could not have crossed the nuclear threshold as soon as it has. Some observers have noted that China may have intended to help Iraq develop its nuclear capability as well. From 1984 to 1986, China assisted Iraq in conducting a study to determine the feasibility of setting up a nuclear power plant from the PRC.[109] Also, shortly after the Iraqi invasion of Kuwait, reports surfaced that the PRC shipped seven tons of lithium hydride to Iraq, a chemical used in the production of missile fuel and nuclear weapons.[110]

In short, the PRC has made a number of important contributions to the nuclear development programs of several states, some of which are hostile to the United States. These development programs by China will continue and probably expand to other states, posing further challenges to American security interests.

Advances in Chinese R&D. The challenges emanating from Chinese weapons exports over the next 5-10 years derive in part from Chinese advances in R&D which make PRC weapons more sophisticated and threatening. In recent years, China has enjoyed assistance in their weapons programs from a number of countries in the West, including the United States, although these programs were scaled back considerably or canceled altogether following the Tiananmen Massacre in June 1989. But others—most notably Israel and, most recently, Russia—continued to assist Chinese weapons development programs, while Western suppliers, including some in the United States, are now beginning to resume their cooperation with Beijing. Since the early 1980s, Israeli exports to China have included the sale of laser-guided armor-piercing warheads, artillery munitions, and cannon barrels for refitting onto Chinese T-59 main battle tanks—perhaps up to U.S. $3

billion worth of arms and technology from Israel to China. More recently, allegations have surfaced that Israel now acts as the principal supplier of foreign, and especially, American technology to China, providing aid in a number of areas, including armor enhancement, missile guidance systems, combat aircraft technology, and missile technology (including the sale of Patriot missile technology).[111] Russian sales of high-tech weaponry, weapons components, and military-related technology—including squadrons of Su-27 combat aircraft, missile guidance and rocket technology, surface-to-air missiles, and nuclear technology—give China a strong boost to advance its own expertise and weapons development programs.[112] China, itself, also plans to increase its military R&D efforts, as reflected in statements by one of China's leading military figures, Yang Shangkun, who urged recently that military budgets be increased, and that greater efforts should be made in the development and testing of medium-range missiles.[113] The technology coming from both Israel and Russia, as well as from the West, will be absorbed and integrated by China's military production units, and added to weaponry bound for export in the years ahead.[114]

In sum, the ongoing development and export of Chinese advanced weaponry—especially missiles and nuclear technology, as well as technical assistance in these technologies—pose a serious threat to American allies, American security interests, and regional stability for the not-so-distant future. Armed with these more advanced weapons, states hostile to the United States—many of which are among China's close clients—will find themselves in a much better position to confront and conflict with American interests, either directly or indirectly. U.S. policymakers and security planners must respond with a concerted approach of targeted management which identifies clearly these principal threats to American interests, and sets out a realistic policy to limit them. The foundations of such a policy are given full treatment in the concluding chapter.

CHAPTER 4

POLICY RECOMMENDATIONS

China has a psychology that is very important. The more pressure you apply, the less China will give in. If you speak reasonably, if you explain your reasons clearly, China might agree. If you resort to high pressure, however, it will be counterproductive.

(former) PRC President General Yang Shangkun, 1991[115]

American policymakers and security planners concerned with Chinese arms exports are faced with a dilemma, but it is not insurmountable. On the one hand, they must accept that for PRC leaders arms exports are not simply business deals, but are an important aspect of China's international relations and security policy. PRC leaders will not easily accept or cooperate with policies they see aimed at restricting their legitimate activities as a sovereign country. On the other hand, Chinese arms transfers increasingly threaten American interests, a problem which must be immediately addressed by the United States. The answer to this dilemma can be found in the formulation and implementation of a carefully crafted and realistic policy of "targeted management." This policy will specifically target military planning, U.S.-PRC relations, and multilateral agreements by advocating the continued development of antitactical ballistic missile defenses, a strict review of U.S.-PRC trade in military-use technologies, the acceptance and even encouragement of certain PRC arms exports, and the strengthening of pertinent international regimes and agreements. This approach can be successful, and in the end is Washington's best hope to secure its interests in the face of the continued proliferation of threatening Chinese arms exports.

Military Planning. The most pressing threat of missile and missile technology proliferation must be countered by continued development and deployment of antitactical ballistic

missile defense systems. An important development in this regard is the establishment in May 1993 of the Ballistic Missile Defense Organization by Secretary of Defense Aspin. This organization, reporting to the Under Secretary of Defense of Acquisition and Technology, will replace the Strategic Defense Initiative Office, and emphasize the development and acquisition of theater ballistic missile defense systems as well as national missile defense systems.[116] Development by the U.S. Army of the proposed Tactical Agile Missile system (TAGM) is an example of the R&D focus needed to face and deter the future threat of ballistic missiles such as those exported and developed by China.[117]

However, two potential problems arise from a policy aimed at the development of more sophisticated antimissile defense systems. First, it remains unclear exactly how effective antimissile defense systems can be. Second, because ballistic missiles in the developing world for the foreseeable future will not directly threaten the continental United States, antimissile defense systems would probably be exported to allies and friends to protect American interests and troop deployments abroad. This could have the adverse result of allowing American military technology to fall eventually into the wrong hands—in effect causing proliferation in an effort to stem proliferation. Indications that Israel transferred Patriot missile technology to China is an example of this problem.[118] For these reasons, policymakers and security planners should not rely solely upon this approach to counter the threat posed by Chinese missile exports, and must also focus on other policy options as well.

U.S.-PRC Relations. The adverse effects of Chinese weapons proliferation need to be limited by targeting technology transfers, by discouraging certain Chinese arms exports while encouraging others, and through a firmer but more nuanced U.S. diplomacy toward China. Every effort should be made to curtail the transfer of military-related technology from the United States to China. This is an area where American resolve has been spotty and ill-defined, in part due to the difficulty in discerning between military use and civilian use technology, but also due to a reluctance on the part

of American administrations to restrict firmly and consistently the flow of military-related technology to China. Repeatedly in response to Chinese arms export activities, U.S. sanctions on technology transfers are imposed, then lifted upon securing Chinese guarantees, then followed by Beijing's resumption of controversial arms exports activities. Continuation of such an incoherent and wavering policy can only encourage Beijing to remain aloof from and even scornful of American threats to impose restrictions on technology transfers.

Restrictions can be specifically targeted to limit the flow of technology applicable to more destabilizing weaponry such as weapons of mass destruction (chemical, biological, and nuclear weapons) and especially their delivery systems: tactical and strategic bombers and missiles. Thus, restrictions should apply to the greatest degree possible on such military-use technologies as avionics, guidance and flight control components, propellants, advanced airframe and missile vehicle metallurgies and materials, refueling capacity, and related computer hardware and software used to aid in the design, development, and deployment of missiles and missile technology. Pressure to see that such technologies are restricted can be applied within the bureaucratic system which oversees military-related technology transfers, such as the Defense Technology Security Administration, the Defense Security Assistance Agency, the Office of the Assistant Secretary for International Security Affairs, and within the armed services themselves, all under the U.S. Department of Defense. In the Department of State, pressure for a policy change can be focussed on the Center for Defense Trade, the Office of Defense Trade Control, the Office of Weapons Proliferation Policy, and the Arms Control and Disarmament Agency. Interagency groups such as the Missile Technology Export Control Group also provide a locus for such antiproliferation policies to take shape. The Defense Department voiced a strong dissent to the proposed U.S. $500 million sale of 300 to 700 jet engines to China, arguing that the jet engine technology, with only minor alterations, could be applied toward the development of more sophisticated cruise missiles by China.[119] Such protests from within the government must be strongly and articulately put forward to safeguard

American security interests in the face of Chinese weapons proliferation. When possible dual-use technologies are to be exported, very strict and explicit language should be employed as to their legitimate end-use, and to the imposition of U.S. sanctions if this language is ignored.

Blanket policies seeking to prohibit the PRC from transferring arms are unrealistic. Such policies fail to recognize China's legitimate interests in exporting arms. Rather, while acknowledging Chinese interests, a more successful policy will focus on curbing certain weapons to certain countries. The most important targets are weapons of mass destruction and medium- and long-range delivery vehicles, such as missiles and strike aircraft. Policymakers should focus on PRC arms exports to countries which directly threaten U.S. interests or the interests of close allies, and to countries over which Washington has little influence. Thus, greater efforts need to be placed on curbing PRC arms exports to countries such as North Korea, Syria, and Iran, and perhaps Pakistan, not on exports to such countries as Thailand and Egypt. Indeed, Chinese arms exports of conventional weapons to American allies, friends, and countries which do not pose a threat to American interests could be encouraged as a policy beneficial to both China and the United States.

More generally, but of equal importance, a firmer but more nuanced diplomatic stance must be presented to China. U.S. security planners and policymakers should use their influence and leverage to make it forcefully and repeatedly clear both in Washington and in Beijing that the PRC no longer enjoys a special position in the American strategic or political outlook which in the past may have given Beijing greater license to act in ways contrary to American interests. U.S. intelligence information regarding Chinese arms development or exports must not be withheld from international scrutiny for fear of hurting China's sensibilities. However, these actions must be subtle and nuanced, and above all not presented as a unilateral effort to isolate or punish China. Rather, these policies must be presented in frequent upper-level exchanges between the two sides in order to provide positive encouragement to China that "normalized" U.S.-PRC relations entail working together

to reap the benefits of engaging more actively with the United States and the international community to achieve a more secure global environment. Highly public displays of American anger or disappointment—such as the yearly controversy over conditioning China's MFN status to its arms export behavior—will fail to move the Chinese leadership in the intended direction. On the contrary, experience with China clearly demonstrates that the harder one pushes Beijing, the more recalcitrant Beijing becomes. The PRC, with a history of headstrong defiance to foreign influence, and with aspirations to Great Power status, will resist unilateral and blatant attempts to force its compliance. In this sense, the Clinton administration in May 1993 wisely chose to distance the arms trade issue from the MFN debate, and to engage China directly in negotiations on this issue.[120] Policymakers and security planners must work carefully and diligently to see that a firm but subtle approach prevails in U.S. efforts to protect its interests with regard to Chinese arms exports. These negotiations must be targeted not only at the traditional ministries of the Chinese state, but they must also address decisions being carried out at the subministerial level, such as by the Central Military Commission, the Commission of Science, Technology and Industry for National Defense, and at the level of the trading companies and enterprises which market and manufacture weapons. In these entities, key export decisions are made and often implemented beyond the aegis of China's official governmental structure.[121]

Such an approach can be partially credited for recent diplomatic successes regarding China's arms exports. These successes include China's signing of the chemical weapons ban convention in January 1993, and decisions in 1992 by the PRC to accede to the nuclear Non-Proliferation Treaty (NPT), and to abide by the guidelines set out by the Missile Technology Control Regime (MTCR). However, questions remain as to how China interprets these agreements. For example, the original guidelines of the MTCR sought to restrict the proliferation of medium-range ballistic missiles defined as having a range of over 300 kilometers and a payload capacity of over 500 kilograms, but the Chinese understand "medium-range" to mean 1000 to 3000 kilometers, thus

justifying their export of the M-series missiles to Pakistan and Syria. Recently adopted guidelines of the MTCR seek to prevent the transfer of relevant technology for any missile capable of carrying a weapon of mass destruction regardless of payload or range. China has thus far not indicated whether it intends to abide by these expanded guidelines.[122] Nevertheless, while questions remain, such developments in Chinese cooperation represent a beginning, and a good foundation upon which further efforts can be built.

International Agreements. At the international level, policymakers need to promote U.S. interests through careful observation of technology transfers, and the promotion and strengthening of international accords. Stricter sanctions must be developed and more readily applied to U.S. allies and friends who do not adequately police the flow of technology from their country to China. This can be done at the bilateral level, or, when applicable, by calling for adherence to governing international agreements such as the MTCR, the NPT, the United Nations Arms Trade Register, and International Atomic Energy Agency safeguards and inspection agreements. But it is clear that efforts by U.S. policymakers must also attempt to strengthen these agreements to make them more difficult to circumvent. Because of the importance of arms transfers to its strategic, political, and economic goals, China is tempted to avoid its commitments to arms production and arms transfers limitation agreements. For example, China hoped to keep secret its arms trade activities with Russia, asking Moscow not to report its transfers to China in the UN Arms Trade Register. Moscow turned down this request.[123] In another example, U.S. intelligence reports claim China broke its 1984 commitment to abide by the treaty banning the development, production, and stockpiling of germ warfare toxins and agents.[124]

With regard to the MTCR in particular, efforts must also continue to expand MTCR membership to include nonsignatories which possess the capability to develop and export missile technology. China must be a primary target of this effort since at present China has agreed to adhere only to the original guidelines of the MTCR, and its spokesmen have

stated that this adherence will apply only to "actual transfers" (meaning, perhaps, that their pledge does not cover the export of missile-related technology and know-how). However, as the membership of the MTCR expands, international pressure will build to convince others such as China to become members as well. In addition, security planners and policymakers in the United States must make a concerted yet subtle effort to convince their counterparts in the PRC to join the MTCR as full and active members.

In short, only through a serious and determined effort at all these levels—through the development of antitactical ballistic missile defense systems, through the exertion of bilateral pressures and persuasion, and through the strengthening and expansion of relevant international accords—will the United States be able to limit the adverse effects of Chinese weapons exports upon American security interests. These efforts will be difficult at best, and are certainly beyond the ability of any single individual or even a single group of individual policymakers and security planners. But, as a beginning to work toward the broad consensus necessary to adequately address Chinese arms exports and American security, these policy approaches demand an acknowledgement and understanding of the principal challenges as set out here, and a consistently active and dedicated effort at the highest reaches of government to manage these challenges in ways beneficial to American interests.

Concluding Thoughts.

Of course, U.S.-China relations are a two-way street, and the success of efforts in Washington also depend in part upon Beijing's willingness to move in a direction favorable to American security interests. Policymakers must acknowledge and contend with four important factors which contribute to China's attitude on arms exports, and keep them in mind in formulating measures to curtail such exports. First, China pursues its arms export policies for strategic, political, and economic reasons which, for the Chinese leadership, are legitimate, are of the utmost importance, and are not to be lightly set aside. Second, a less obvious, but perhaps equally

important motivating factor also drives China's arms exports: the achievement of heightened international prestige and Great Power status as a major supplier of armaments worldwide. Military officials, bureaucrats, and scholars at China's leading international and strategic studies centers consistently support the view, both in their writings and in their discussions, that PRC arms exports are legitimate exercises of Chinese sovereignty, and are handled in a reasonable manner. When this attitude combines with the widespread Chinese belief that the West unjustifiably continues to treat the PRC as a second-class citizen in the international community, then American policies aimed to reduce the proliferation of Chinese weapons will be viewed as coercion, not cooperation. Third, Chinese military theory holds that sales of such weapons as ballistic missiles are not necessarily destabilizing, particularly when armed with conventional warheads. Indeed, the Chinese argue that ballistic missiles of the type they export are not as accurate, destructive or multidimensional when conventionally-armed as long-range strike aircraft armed with a conventional or nonconventional weapon. Fourth, the Chinese contend that their weapons exports comprise a small percentage of the world's total arms trade, and that the major suppliers—such as the United States—must cut back on arms exports first.[125] When such viewpoints as these prevail in Beijing, policies aimed at limiting Chinese arms exports will be difficult. But these are not reasons to do less, but rather to redouble efforts where some success is likely.

To be successful, the United States must adopt an approach on the security issues raised here which at once is realistic and firm about China's capabilities and intentions and their threats to U.S. and global security, but which keeps the door open in a way which sincerely welcomes China to a fair dialogue on issues of mutual security concern. The hard work necessary to develop and implement such a policy needs to begin now, for without such a policy, the United States can only expect to face greater challenges in the future, with even fewer options available to counter them.

ENDNOTES

1. Quoted in Foreign Broadcast Information Service, *Daily Report: China*, September 8, 1988, p. 4.

2. China in 1990 was the third largest supplier of weapons to the developing world in terms of the value of contracted arms export agreements. In terms of actual deliveries of conventional weapons to the developing world in 1990, China ranked fourth behind the United States, the Soviet Union, and France. Richard F. Grimmett, *Trends in Conventional Arms Transfers to the Third World by Major Supplier*, Washington, DC: Congressional Research Service, 1991; see also "U.S. Ranked No. 1 in Arms Sales," *New York Times*, August 11, 1991, p. 1. For the years 1991 and 1992, and in total for the years 1988 through 1992, China ranked as the third largest supplier of weapons to the developing world. Stockholm International Peace Research Institute, *SIPRI Yearbook 1993: World Armament and Disarmament* (hereinafter cited as *SIPRI Yearbook* followed by the year of the edition), Oxford: Oxford University Press, 1993, Table 10.10.

3. The background on Chinese arms exports is given much more detailed and analytical treatment in two book-length studies on the subject: R. Bates Gill, *Chinese Arms Transfers: Purposes, Patterns, and Prospects in the New World Order*, Westport: Praeger, 1992; Anne Gilks and Gerald Segal, *China and the Arms Trade*, New York: St. Martin's Press, 1985.

4. These figures are drawn from Michael Brzoska and Thomas Ohlson, *Arms Transfers to the Third World, 1971-1985*, Oxford: Oxford University Press, 1987, Appendices 4A and 4B; Stockholm International Peace Research Institute, *SIPRI Yearbook: 1991*, Appendix 7A and *SIPRI Yearbook 1993*, Table 10.10.

5. *SIPRI Yearbook 1993*, Table 10.10.

6. Brzoska and Ohlson, *Arms Transfers to the Third World*, Appendices 4A and 4B; *SIPRI Yearbook 1991*, Table 7.1. The dollar values are expressed in constant 1985 U.S. dollars.

7. *SIPRI Yearbook 1993*, Table 10.10. Dollar figures are expressed in constant 1990 U.S. dollars.

8. *Ibid.*

9. *Ibid.*

10. Other recent studies on Chinese arms exports would include: John Frankenstein, "The People's Republic of China: Arms Production, Industrial Strategy and Problems of History," in Herbert Wulf, ed., *Arms Industry, Inc.*, Oxford: Oxford University Press, 1993; Gill, *Chinese Arms Transfers: Purposes, Patterns, and Prospects in the New World Order*; Richard Bitzinger, "Arms to Go: Chinese Arms Sales to the Third World," *International Security*, Fall 1992; Gill, "Curbing Beijing's Arms Sales," *Orbis*, Summer 1992; Bilveer Singh, "China's Arms Exports: Great Benefits And Dangers," *Asian Defence Journal*, November 1991; John W. Lewis, Hua Di, Xue Litai, "Beijing's Defense Establishment: Solving the Arms-Export Enigma," *International Security*, Spring 1991.

11. Based upon SIPRI arms trade data base, 1993.

12. See "Qian pledge on Mideast arms sales," *South China Morning Post*, September 18, 1992, p. 10; "Translation error on arms," *South China Morning Post*, September 19, 1992, p. 2.

13. Gordon Jacobs and Tim McCarthy, "China's Missile Sales —Few Changes for the Future," *Jane's Intelligence Review*, December 1992, p. 561.

14. "Who Us?", *The Economist*, October 6, 1990, p. 80.

15. Gordon Jacobs and Tim McCarthy, "China's Missile Sales—Few Changes for the Future," *Jane's Intelligence Review*, December 1992, p. 562.

16. Joseph S. Bermudez, Jr., "Ballistic Missile Development in Egypt," *Jane's Intelligence Review*, October 1992, p. 473.

17. "United States," *Asia-Pacific Defence Repo[illegible]* February 1991, p. 26.

18. "Asian Reports," *Armed Forces Journal*, April 1993, p. 20.

19. This 230mm rocket with a range of about 40 kilometers was available for export from the Iranians at a recent defense exhibition in the Middle East. See "Dubai Defence Expo: China, Iran Dominate," *Defence Journal* (Karachi), January-February 1992, pp. 55-57.

20. Gordon Jacobs and Tim McCarthy, "China's Missiles Sales—Few Changes for the Future," *Jane's Intelligence Review*, December 1992, p. 559.

21. See International Institute for Strategic Studies, *The Military Balance 1991-1992*, London, Brassey's, 1991, pp. 155 and 159; "Arms of Friendship," *Far Eastern Economic Review*, November 5, 1992, p. 7.

22. "Chinese Subs for Navy," *Asian Defence Journal*, February 1993, p. 90; "Arms Deal with China Cleared," *Asian Recorder*, November 4-10, 1992, p. 22695.

23. Tracing the transfer of M-11 missiles to Pakistan is fraught with denials and allegations owing to the sensitive nature of these weapons which prevents intelligence sources and governments from disclosing full details on this issue. In the spring of 1991, fears of Chinese M-11 exports to Pakistan were calmed by the Chinese assurance that only a "small number" of M-11 launchers—not missiles—had been provided to Pakistan. Later, during Secretary of State Baker's November 1991 visit to Beijing, and with the submission in February 1992 of China's letter to Washington adhering to the Missile Technology Control Regime, U.S. officials believed that China had not sold the M-11 to Pakistan. However, in early 1992, one analyst of the Chinese military claimed that Beijing "confirmed the transfer of M11 tactical-range missiles to Pakistan." "Unguided missile: China's arms exports stir consternation," *Far Eastern Economic Review*, February 6, 1992, p. 42. Citing U.S. intelligence sources, a number of observers reported in late 1992 that China shipped "about two dozen" M-11 missiles to Pakistan beginning in November 1992. "Beijing Speeds Up Sales of Weapons," *Asian Defence Journal*, January 1993, p. 156; "China Said to Deliver Missiles to Pakistan," *International Herald Tribune*, December 5-6, 1992, p. 5. Following this report was the January 1993 revelation that "Chinese sources have confirmed China's sale of M11 tactical surface-to-surface missiles to Pakistan." "On Target," *Far Eastern Economic Review*, January 7, 1993, p. 6. In May 1993, *The New York Times* reported that highly sensitive classified information shows that China had been shipping M-11 missiles, or at least missile parts, to Pakistan since late 1992. "U.S. Aides Assert China is Breaching Missile Pact," *International Herald Tribune*, May 7, 1993, p. 1. The annual publication *Strategic Survey*, published in May 1993, states that China sold M-11 missiles to Pakistan; its sister publication, *Military Balance*, does not report M-11s in the Pakistani arsenal. Compare International Institute for Strategic Studies, *Strategic Survey 1992-1993*, London: Brassey's, 1993, p. 135 and International Institute for Strategic Studies, *Military Balance 1992-1993*, London: Brassey's, 1993, p. 136. Another leading military analysis organization, Jane's Information Group, states: "In 1992, Pakistan received 24 MM-11s from PRC." See John Reed, *Defense Exports: Current Concerns*, Jane's Special Brief, London: Jane's Information Group, April 1993, p. 16-4. A recent *Washington Post* report suggests that U.S. intelligence on the missile transfer is being kept secret to avoid upsetting currently fragile relations with China. "U.S. Evidence Suggests China Breaks Arms Pact," *Washington Post*, May 18, 1993, p. 1.

24. Quoted in John Wilson Lewis and Hua Di, "China's Missile Ballistic Programs: Technologies, Strategies, Goals," *International Security*, Fall 1992, p. 37, citing Reuter Transcript report (06-27-0542), June 27, 1991.

25. On the M-9 deal, see Gordon Jacobs and Tim McCarthy, "China's Missile Sales—Few Changes for the Future," *Jane's Intelligence Review*, December 1992, pp. 559-563. On the M- series missiles, see "Pakistan," *Milavnews*, August 1991, p. 22; "China: Irresponsible Arms Dealer?", *Asian Defence News*, July 1991, p. 107; "Pakistan," *Milavnews*, February 1991, p. 23. Also, see the discussion in chapter 3 about the PRC's M-9 exports to Pakistan.

26. "L'Egypte envisage l'acquisition de l'avion Sino-Pakistanais K-8," *Air & Cosmos*, July 1-7, 1991, p. 40.

27. On the development of joint Sino-Pakistan weapons production, "Pakistan-China defense co-operation: an enduring relationship," *International Defense Review*, February 1993, pp. 108-111; "Surface to Air Missile (Anza Mark-1)," *Defence Journal* (Karachi), May-June 1992, pp. 59-61; "Baktar Shikar (HJ-8) Anti-Tank Missile System," *Defence Journal* (Karachi), September-October 1992, pp. 33-35; Mushahid Hussain, "Pakistan Reaches MBT milestone," *Jane's Defence Weekly*, August 11, 1990, p. 187; "Pakistan's Procurement Chief on New Programs," *International Defense Review*, June 1989, pp. 764-767.

28. Beg is quoted in "Pakistan to test missile," *International Defense Review*, January 1991, p. 11.

29. See "Sri Lanka acquires jets to counter air intruders," *International Defense Review*, July 1991, p. 688. Also see the discussion with Sri Lankan Defence Secretary General S.C. Ranatunga in "The JDW Interview," *Jane's Defence Weekly*, July 13, 1991, p. 80.

30. "Taiwan's Military Build-Up," *Asian Defence Journal*, February 1993, p. 22; "China Expands Air Forces," *Military Technology*, August 1992, pp. 49-51.

31. SIPRI arms trade data base, 1993.

32. Developments in the PRC-Burma arms trade are detailed in "Regional rivals leading Burma astray," *Jane's Defence Weekly*, June 15, 1991, p. 1053; "Allies in Isolation: Burma and China move closer," *Jane's Defence Weekly*, September 15, 1990, p. 475; "Lock and load: Chinese arms supply suggests SLORC digging in," *Far Eastern Economic Review*, September 13, 1990, p. 28.

33. "Rangoon's Rubicon: Infrastructure aid tightens Peking's control," *Far Eastern Economic Review*, February 11, 1993, p. 28.

34. Timothy V. McCarthy, *A Chronology of PRC Missile Trade and Developments*, Monterey, California: International Missile Proliferation

Project, Monterey Institute of International Studies, February 12, 1992, p. 1.

35. Quoted in "The United States also sells weapons: China's president sees a double standard," *U.S. News & World Report*, May 27, 1991, p. 43.

36. The empirical basis for the findings in this chapter rests upon an analysis of the appendices which are found at the back of this study.

37. These are figures derived from the SIPRI database, 1993.

38. This approach follows similar research on Soviet-client arms export relations offered in William H. Baugh and Michael L. Squires, *Developing Patterns in Arms Transfers*, paper presented at the annual conference of the International Studies Association, Washington, DC, April 12, 1990.

39. See references to Syrian and Pakistani financial aid for the development of the M-series missile in "Defense Dept. Confirms Patriot Technology Diverted," *Aviation Week & Space Technology*, February 1, 1993, p. 27; "China's Missile Sales—Few Changes for the Future," *Jane's Intelligence Review*, December 1992, pp. 559-563; McCarthy, *A Chronology of PRC Missile Trade and Developments*.

40. On Libyan financing of the M-9, see Joseph S. Bermudez, Jr., "Syria's Acquisition of North Korean Scuds," *Jane's Intelligence Review*, June 1991, p. 250, citing "A Case of Finding Evidence," *Jane's Defence Weekly*, July 14, 1990, p. 54 and "Israel Missiles," *Associated Press*, December 29, 1989; "Libya trying to buy Chinese SSMs, says Israel," *Flight International*, May 23-29, 1990, p. 18. On Saudi financing, see McCarthy, *A Chronology of PRC Missile Trade and Developments*, p. 11 and sources cited therein. On Pakistani funding, see McCarthy, *Chronology*, p. 17 citing *New York Times*, June 10, 1991, p. 1 and *Washington Post*, June 11, 1991, p. A14.

41. See Gordon Jacobs and Tim McCarthy, "China Missile Sales—Few Changes for the Future," *Jane's Intelligence Review*, December 1992, p. 560.

42. See "BCCI Aided Arms Dealers," *Defense News*, August 5, 1991, p. 2.

43. See "Energy Needs of China Fuel Weapons Scenario: Arms Flow to the Mideast Is Foreseen When Beijing Turns to Imported Oil," *International Herald Tribune*, May 5, 1993, p. 1.

44. On this point and on the related discussion which follows, see John W. Lewis, Hua Di, and Xue Litai, "Beijing's Defense Establishment: Solving the Arms Export Enigma," *International Security*, Spring 1991.

45. On the arms export corporations, their leaders, and the arms export bureaucracy, see John Frankenstein, "The People's Republic of China: arms production, industrial strategy and problems of history," in Herbert Wulf, ed., *Arms Industry, Inc.*, Oxford: Oxford University Press, 1993, pp. 276-77, 279; Lewis, "Beijing's Defense Establishment," pp. 88, 92-96.

46. These four perspectives are offered, respectively, in International Institute for Strategic Studies, *Strategic Survey, 1988-89*, London: International Institute for Strategic Studies, 1989, p. 23; Wei-chin Lee, "The Birth of a Salesman: China as an Arms Supplier," *Journal of Northeast Asian Studies*, Winter 1987-88, p. 36; Anne Gilks and Gerald Segal, *China and the Arms Trade*, New York: St. Martin's Press, 1985, p. 196 and p. 3.

47. This description of Chinese arms sales behavior was expressed by a Chinese military officer and diplomat attached to the United Nations Conference on Disarmament in Geneva.

48. Quoted in "Rangoon's Rubicon: Infrastructure aid tightens Peking's control," *Far Eastern Economic Review*, February 11, 1993, p. 28.

49. See, for example, "Defense Dept. Confirms Patriot Technology Diverted," *Aviation Week & Space Technology*, February 1, 1993, pp. 26-27; "China Exploiting U.S. Patriot Secrets," *Aviation Week & Space Technology*, January 18, 1993, pp. 20-21; "China Expands Air Forces," *Military Technology*, August 1992; "Israelis visit China as relations warm," *Jane's Defence Weekly*, November 30, 1991, p. 1023; "Secret Missile Deal with Israel," *Asian Defence Journal*, May 1988, p. 115; "Lavi radar system said sold to China," *The Jerusalem Post International Edition*, March 16, 1988, p. 5.

50. John Calabrese, *China's Changing Relations with the Middle East*, London: Pinter, 1991; Yitzhak Shichor, "The Middle East," in Gerald Segal and William T. Tow, eds., *Chinese Defence Policy*, London: Macmillan, 1984; Yitzhak Shichor, *The Middle East in China's Foreign Policy, 1947-1977*, Cambridge: Cambridge University Press, 1979; see also Michael B. Yahuda, "Dilemmas and Problems for China in the Middle East," in Colin Legum, ed., *Crisis and Conflicts in the Middle East*, New York: Holmes & Meier, 1981, pp. 104-105.

51. Andrew J. Pierre, *The Global Politics of Arms Sales*, Princeton: Princeton University Press, 1982, p. 3 (emphasis deleted).

52. Quoted in "China defends Saudi missile sale," *Financial Times*, April 7, 1988, p. 3.

53. The following analysis based on figures drawn from International Institute for Strategic Studies, *The Military Balance*, London: Brassey's, (several years); *SIPRI Yearbook* (several years).

54. Most of Iraq's remaining land-based equipment consists of older Soviet and Chinese armor and artillery, such as the Chinese T-69 and T-62 tanks and Type 531 armored personnel vehicles. Michael Eisenstadt, "The Iraqi Armed Forces Two Years On," *Jane's Intelligence Review*, March 1993, p. 125.

55. *Ibid.*

56. See Chapter 1, endnote 23, which provides sourcing and further explanation on China's M-11 deal with Pakistan.

57. Gordon Jacobs and Tim McCarthy, "China's Missiles Sales—Few Changes for the Future," *Jane's Intelligence Review*, December 1992, p. 559.

58. On ballistic missile programs in the developing world, see Aaron Karp, "Ballistic Missile Proliferation in the Third World," *SIPRI Yearbook 1989*, pp. 290-308.

59. On Sino-Libyan missile-related negotiations, see Gordon Jacobs and Tim McCarthy, "China's Missile Sales—Few Changes for the Future," *Jane's Intelligence Review*, December 1992, p. 562; "Middle East Offers U.S. Firms An Aerospace Bonanza," *Aviation Week & Space Technology*, November 4, 1991, p. 57; "Libya trying to buy Chinese SSMs, says Israel," *Flight International*, May 23-29, 1990, p. 18; "Libya and Syria seek missiles from China," *Financial Times*, May 23, 1990, p. 2; "Arab States Turning to Beijing for New Arms," *Asian Defence Journal*, August 1988, p. 87.

60. Joseph S. Bermudez, Jr., "Ballistic Missile Development in Egypt," *Jane's Intelligence Review*, October 1992, p. 453.

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62. See "Iran's Ballistic Missile Programs," *Middle East Defense News*, December 21, 1992, p. 4-5; Jacobs and McCarthy, "China's Missile Sales," p. 561; McCarthy, *Chronology*, p. 10; Azriel Lorber, "Missile Proliferation and the Problems of ATBM Defence," *Military Technology*, July 1990, p. 41.

63. McCarthy, *Chronology*, p. 13, citing *New York Times*, March 30, 1990, p. A7.

64. "Iran's Ballistic Missile Programs," *Middle East Defense News*, December 21, 1992, p. 4-5. See also "Asian Reports," *Armed Forces Journal*, April 1993, p. 20; Jacobs and McCarthy, "China's Missile Sales," p. 561; "Iranian Arms Buildup Concerns U.S.," *Defence News*, March 2, 1992, p. 29; "Iranian SSMs in Production," *Defence*, March 1991, p. 6; McCarthy, *Chronology*, pp. 15, 17.

65. "Special Report: The Iranian Defense Industry," *Middle East Defense News*, March 1, 1993, p. 4.

66. "Military build-up," *Asian Recorder*, March 12-18, 1993, p. 22981; Jacobs and McCarthy, "China's Missile Sales," p. 561.

67. On Chinese assistance in the development of longer range missiles for Iran, see Jacobs and McCarthy, "China's Missile Sales," p. 561; Joseph S. Bermudez, Jr., "Ballistic Missiles in the Third World—Iran's Medium-Range Missiles," *Jane's Intelligence Review*, April 1992, p. 151; McCarthy, *Chronology*, p. 10.

68. See "China makes missile pledge to Israel," *Interavia Air Letter*, No. 12,750, May 24, 1993, p. 5; "China Calms Israel over Mideast Missiles," *International Herald Tribune*, May 21, 1993, p. 1.

69. The number of CSS-2 missiles sold to Saudi Arabia remains in question. Estimating that each missile's cost, including the system, advisors, and training, is about U.S. $100 million, and that the deal came to be about U.S. $2.5 to 3.6 billion, one analyst puts the number between 24 and 36. Yitzhak Shichor, *A Multiple Hit: China's Missiles Sale to Saudi Arabia*, SCPS Papers No. 5, National Sun Yat-sen University, Sun Yat-sen Center for Policy Studies, April 1991, p. 2-3. *Defense & Foreign Affairs Weekly*, April 15, 1991, p. 1, states there are 36 CSS-2s in Saudi Arabia. International Institute for Strategic Studies, *Military Balance 1992-93*, London: Brassey's, 1993, p. 120, puts the number of Saudi CSS-2 between 35 and 50. Many sources put the number between 50 and 60. For example, one report, based upon analysis of satellite photography of the Saudi CSS-2 missile sites estimated between 50 and 60 missiles. See Aaron Karp, "Ballistic Missile Proliferation in the Third World," *SIPRI Yearbook 1989*, p. 304, citing "Swedes say satellite reveals secret Saudi Arabian missile base, *Reuters*, September 19, 1988. See also *Military Technology World Defence Almanac 1991-92*, January 1992, p. 181; "Saudi CSS-2s are 'wild card' in Gulf," *Flight International*, August 22-28, 1990, p. 8; "Ironies of Saudi's IRBM Purchase," *Jane's Defence Weekly*, April 2, 1988, p. 627. The CSS-2 missiles are also numbered at 120 in "Saudi CSS-2 missiles now operational," *Flight International*, June 6-12, 1990, pp. 12-13. But this report appears to be erroneous.

70. "United States," *Asia-Pacific Defence Reporter*, February 1991, p. 26; "Do Saudis Have Nuclear Weapons?," *Washington Post*, December 12, 1990, p. G15.

71. "United States," *Asia-Pacific Defence Reporter*, p. 26. See also McCarthy, *Chronology*, p. 14.

72. See "Ballistic Training," *Far Eastern Economic Review*, April 27, 1989, p. 8.

73. These reports appeared, respectively, in "United States," *Asia-Pacific Defence Reporter*, p. 26, and McCarthy, *Chronology*, p. 16, citing *Defense & Foreign Affairs Weekly*, April 15, 1991, p. 1.

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75. On the Sino-Syrian agreement, "Syria has signed an agreement," *The Middle East*, September 1989, p. 22; "Syria," *Milavnews*, September 1989, p. 20; "Syria to buy Chinese missiles," *Flight International*, August 12, 1989, p. 12; "Rabin confirms China/Syria M-9 talks," *Jane's Defence Weekly*, July 2, 1988, p. 1354; "Syrians Defend Missile Purchases," *International Herald Tribune*, June 28, 1988, p. 6. On American pressure to cancel the Sino-Syrian deal, "New Chinese M-9 for Syria" *Defense & Armament Héraclès International*, January 1990, p. 6; "Bush Bid to Fix Beijing Ties Strains Those With Hill," *Congressional Quarterly Weekly Report*, December 16, 1989, p. 3436.

76. Jacobs and McCarthy, "China's Missile Sales," p. 562.

77. *Ibid.*; "Why Are Chinese Missile Experts in Syria?", *International Herald Tribune*, March 6, 1992, p. 6.

78. Michael Eisenstadt, "Syria's Strategic Weapons," *Jane's Intelligence Review*, April 1993, p. 173; "Syrian-Iran defence links arouse western suspicion," *Financial Times*, March 9, 1992, p. 1; Joseph S. Bermudez, Jr., "Syria's Acquisition of North Korean Scuds," *Jane's Intelligence Review*, June 1991, pp. 249-251; Joseph S. Bermudez, Jr., "New Developments in North Korean Missile Programme," *Jane's Soviet Intelligence Review*, August 1990, p. 343-345; "Israel Cites Signs of Missile Deals," *International Herald Tribune*, December 30-31, 1989, p. 2; "The North Korea Scud-B Programme," *Jane's Soviet Intelligence Review*, April 1989, pp. 177-181.

79. Eisenstadt, "Syria's Strategic Weapons," p. 170.

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82. Jacobs and McCarthy, "China's Missile Sales," p. 560.

83. Joseph S. Bermudez, Jr. "Ballistic Missiles in the Third World—Iran's Medium-Range Missiles," *Jane's Intelligence Review*, April 1992, pp. 147-151.

84. John Reed, *Defence Exports: Current Concerns*, Jane's Special Brief, London: Jane's Information Group, April 1993, p. 16-3.

85. Jacobs and McCarthy, "China's Missile Sales," p. 560; McCarthy, *Chronology*, p. 10, citing Seth Carus, *Trends and Implications of Missile Proliferation*, paper prepared for the International Studies Association, April 1990, p. 12; and *Jane's Defence Weekly*, April 15, 1989, p. 635. See also "Pakistan," *Milavnews*, February 1991, p. 23; "Pakistan to test missile," *International Defense Review*, January 1991, p. 11.

86. Reed, *Defence Exports: Current Concerns*, p. 16-4.

87. "US says Chinese missile launchers seen in Pakistan," *Far Eastern Economic Review*, April 18, 1991, p. 16; "Chinese Supply of Arms," *Asian Recorder*, September 30 - October 6, 1991, p. 21945. Hua Di, an expert on Chinese missile proliferation, states that the reports about M-11 launchers in Pakistan in early 1991 were incorrect since the M-11 had not yet been successfully tested at that time. Hua Di, "Ballistic missile exports will continue," *Asian-Pacific Defence Reporter*, September 1991, p. 14. However, in a later work he states that the M-11 was successfully tested in mid-1990, and that China reportedly exported the M-11 to Pakistan in early

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97. See "Satellite launch planned," *Jane's Defence Weekly*, July 21, 1990, p. 74.

98. Jacobs and McCarthy, "China's Missile Sales," p. 562; "Libya and Syria seek missiles from China," *Financial Times*, May 23, 1990, p. 1; "Libya trying to buy Chinese SSMs, says Israel," *Flight International*, May 23-29, 1990, p. 18; "Syrian Missiles," *Flight International*, December 20,

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100. McCarthy, *Chronology*, p. 13, citing *New York Times*, March 30, 1990, p. A7; Lewis and Hua, "China's Ballistic Missile Programs," p. 37.

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113. Yang is quoted in "Shakeup in the Army," *Asian Recorder*, January 15-21, 1993, p. 22851.

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116. "Aspin Announces New Name and Focus for Strategic Defense Initiative," *Wireless File*, No. 91, May 13, 1993, pp. 5-6.

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119. "Pentagon Protests US Sale of Engine Technology to China," *International Herald Tribune*, January 14, 1993, p. 3; "China Seeks Cruise Missile," *Middle East Defense News*, November 23, 1992, p. 5.

120. See "Clinton Signs MFN Extension For China," *Wireless File*, No. 102, May 28, 1993, pp. 8-10.

121. This point is made in greater detail in John W. Lewis, Hua Di, and Xue Litai, "Beijing's Defense Establishment: Solving the Arms-Export Enigma," *International Security*, Spring 1991.

122. "Missile technology controls expanded," *International Defense Review*, February 1993, p. 90; "MTCR Members Agree on New Export restrictions," *Arms Control Today*, January-February 1993, p. 22; "Missile Technology Control Regime Guidelines Revised," *U.S. Department of State Dispatch*, Vol. 4, No. 3, January 18, 1993, p. 41.

123. "Open Arms," *Far Eastern Economic Review*, February 11, 1993, p. 9.

124. See "China Suspected of Reviving Germ Weapons," *International Herald Tribune*, February 25, 1993; "Report Says Chinese BW Program Continues," *Arms Control Today*, March 1993, p. 27.

125. See, for example, He Dalong, "A Bizarre Weapons Market," *Beijing Review*, September 2-8, 1991, p. 10.

GLOSSARY

ABBREVIATIONS
USED IN THE TEXT AND APPENDICES

AAV - antiaircraft vehicle

AAM - air-to-air missile

APC - armored personnel carrier

ASM - air-to-surface missile

ATG - antitank gun

ATM - antitank missile

FAC - fast attack craft

IRBM - intermediate range ballistic missile

LT - light tank

MBT - main battle tank

MRS - multirocket system

PC - patrol craft

R&D - research and development

SAM - surface-to-air missile

ShShM - ship-to-ship missile

SShM - surface-to-ship missile

SPH - self-propelled howitzer

SSM - surface-to-surface missile

TG - towed gun

TH - towed howitzer

APPENDICES

The following appendices provide empirical data on the transfer of major conventional weapons from China over the years 1951 through 1992. There are four appendices, one for each category of Chinese major conventional arms production: missiles, armor and artillery, aircraft, and naval vessels. Within each appendix, weapons exports are shown by recipient country, year of delivery, and type of weapon. In some instances, additional clarifying remarks are included. While every effort has been made to assure the accuracy of these tables, anyone reviewing them should recognize the inherently secretive nature of the arms trade, and the resultant difficulties to determine with absolute certainty the extent, nature, and destination of international arms transfers. Such difficulties are especially present in attempts to trace arms transfers of the PRC, one of the most closed polities in the world, and particularly sensitive about its arms transfer policies. Hence, these appendices may not reflect all major weapons transfers by the PRC, and they may reflect arms transfers in which there may be an element of uncertainty.

The appendices are compiled and derived from numerous sources. Most important is the annual publication from the Stockholm International Peace Research Institute, *SIPRI Yearbook: World Armament and Disarmament* (Oxford: Oxford University Press, several years). Several yearly editions of this work were used in developing these appendices. The work by Michael Brzoska and Thomas Ohlson, *Arms Transfers to the Third World, 1971-85* (Oxford: Oxford University Press, 1987) proved useful as well. Other works consulted in the creation of these appendices include Anne Gilks and Gerald Segal, *China and the Arms Trade* (New York: St. Martin's Press, 1985); Stockholm International Peace Research Institute, *The Arms Trade with the Third World: Arms Trade Registers* (Stockholm: Almqvist & Wiksell, 1975); numerous defense industry publications, including *Jane's Defence Weekly, Defense*

Intelligence Review, Milavnews, Asian Defence Journal, and *Pacific Defence Reporter*, among others.

APPENDIX A

EXPORTS OF CHINESE MISSILES AND MISSILE LAUNCHERS, 1951-92

Country	Year	Amount/Type	Other Information
Afghanistan	1982-89	850 HY-5 portable SAM	to the Mujaheddin
Albania	1966-68	SA-2 SAM batteries	
Bangladesh	1983,1988	84 HY-2 ShShM/SShM	
	1983,1988	10 HY-2 launcher	
	1989-90	8 C-801 ShShM	
Cambodia	1978	200 HJ-73 ATM	to the Khmer Rouge
	1988	20 HY-5 portable SAM	
Chile	1988	60 HJ-73 ATM	
	1988	10 HJ-8 ATM	
Egypt	1980	(?)SA-2 mobile SAM	
	1984	106 HY-2 ShShM/SShM	
	1984	10 HY-2 ShSh launcher	
Iran	1982-88	6500 HJ-73 ATM	
	1985-86	150 HQ-2B SAM	
	1985-86	14 HQ-2B SAM system	
	1985-88	600 HY-5 portable SAM	
	1986-88	540 PL-2A AAM	
	1986-88	360 PL-7 AAM	
	1987-90	64 HY-2 ShShM/SShM	
	1987-88	8 HY-2 launcher	
	1987	100 C-801 ASM	
	1987	8 C-801 launcher	
	1986-91	1000 Oghab SSM	licensed production
	1990-92	8 HQ-2B SAM system	
	1990-92	96 HQ-2B SAM	
Iraq	1988	72 HY-2 ShShM/SShM	
	1988-90	128 C-601 ASM	
Myanmar	1990-92	108 PL-2A AAM	
Nicaragua	1985	40 HN-5A portable SAM	for the Contras
North Korea	1975-76	36 HY-2 ShShM/SShM	
	1975-76	6 HY-2 launcher	
	1980-83	8 HY-2 ShShM/SShM	
	1980-83	8 HY-2 launcher	
	1982	100 HN-5A portable SAM	

Country	Year	Amount/Type	Other Information
Pakistan	1980	54 SA-2 mobile SAM	
	1980	6 SA-2 SAM system	
	1981	8 HY-2 ShShM/SShM	
	1981,1984	8 HY-2 ShSh launcher	
	1984	16 HY-2 ShShM/SShM	
	1985	20 HQ-2B SAM	
	1985	2 HQ-2B SAM system	
	1988-90	300 HY-5 portable SAM	
	1990-92	350 HN-5A portable SAM	licensed production
	1990-92	150 HJ-8 ATM	licensed production
	1991	24(?) M-11 SSM launcher	
	1991	55(?) M-11 SSM	
Saudi Arabia	1987-89	60 CSS-2 IRBM	
Syria	1990?	24(?) M-9 SSM	unconfirmed; deal may be on hold
Thailand	1988	12 HQ-2B SAM	
	1988	1 HQ-2B SAM system	
	1987-88	68 HN-5A portable SAM	
	1991	900 HN-5A portable SAM	on order
	1991-92	4 C-801 ShShM launcher	
	1991-92	24 C-801 ShShM	

APPENDIX B

EXPORTS OF CHINESE ARMOR/ARTILLERY, 1951-92

Country	Year	Amount/Type	Other Information
Afghanistan	1982-89	350 Type 63 MRS	to the Mujaheddin
Albania	1969-70	100 Type 63 MRS	
Angola	1975	25 T-59 MBT	to the UNITA rebels
Bangladesh	1980-81	36 T-59 MBT	
	1984	20 Type 54 122mm SPH	
Burkina Faso	1966	20(?) Type 63 MRS	
Cambodia	1968-69	200 Type 63 MRS	
	1978	100 T-60 LT	
	1978	33 BRDM-1 tank destroyer	to the Khmer Rouge
	1988	6 Type 60 122mm TG	to the Khmer Rouge
	1990	24 T-59 MBT	
Congo	1971	14 T-62 LT	
	1971	10 M-44 100mm TG	
	1972	10 Type 55 APC	
	1972	8 M-38 122mm TG	
	1972	4 PT-76 LT	
	1977	25 Type 56 APC	
	1978	15 T-59 MBT	
	1981	20 BTR-60P APC	
	1983	10 Type 55 APC	
Egypt	1976	122mm TG	
		130mm TG	
Guinea	1979	20 M-38 122mm TG	
	1982	20 M-46 130mm TG	
	1982	10 Type 54 122mm SPH	
	1983	20 T-63 LT	
Guinea-Bissau	1984	20 Type 56 APC	
Iran	1982-84	300 T-59 MBT	
	1982-84	300 Type 59/1 130mm TG	
	1983-90	800 Type 63 107mm MRS	
	1985-86	200 T-59 MBT	
	1985-86	100 Type 59/1 130mm TG	
	1985-86	100 Type 60 122mm TG	
	1986-88	300 Type 531 APC	
	1987	120 Type 59/1 130mm TG	
	1987-88	240 T-69 MBT	

Country	Year	Amount/Type	Other Information
Iraq	1982-88	1300 T-59 MBT	
	1983-87	1500 T-69 MBT	
	1982-88	650 Type 531 APC	
	1982-88	720(?) Type 59/1 130mm TG	
Mali	1977	6 T-62 LT	
Myanmar	1990	30 T-63 LT	
	1990	50 T-69 MBT	
Nepal	1988	10 P-763 AAV	
North Korea	1972	20 T-62 LT	
	1973	50 Type 66 SPH	
	1973-74	50 Type 531 APC	
	1978-79	100 Type 54 122mm SPH	
	1981	50 Type 59/1 130mm TG	
	1982-85	100 Type 63 130mm MRS	
North Vietnam	1960-62	20 BTR-152 APC	
	1965-68	400 Type 63 MRS	
	1971	100 Type 60 122mm TG	
	1971-72	100 T-60 LT	
Oman	1983	12 Type 59/1 130mm TG	
Pakistan	1965	80 T-59 MBT	
	1970-72	210 T-59 MBT	
	1972-73	50 T-63 LT	
	1973-76	200 Type 531 APC	
	1974	159 T-59 MBT	
	1976-80	200 Type 59/1 130mm TG	
	1978-79	50 Type 54 122mm SPH	
	1978-88	825 T-59 MBT	many upgraded to T-69
	1981-82	50 T-60 LT	
	1982-83	50 Type 81 122mm MRS	
	1989-91	275 T-69 MBT	
	1991-92	160 T-69 MBT	licensed production to produce 1000
Somalia	1970	12 T-62 LT	
	1982	10 Type 59/1 130mm TG	
	1982	10 Type 60 122mm TG	
Sri Lanka	1987	100 Type 69 Spaag AAV	
	1991	20 Type 531 APC	
	1991	18(?) Type 59/1 130mm TG	
Sudan	1972	10 T-59 MBT	
	1972	20 T-62 LT	
	1978	10 T-63 LT	
	1981	10 Type 531 APC	
	1981	20 Type 54 122mm SPH	
	1981	20 Type 59/1 130mm TG	
	1989	10 Type 59/1 130mm TG	
	1989	20 Type 531 APC	

Country	Year	Amount/Type	Other Information
Tanzania	1967	15 T-62 LT	
	1971	20 T-59 MBT	
	1973-75	18 M-31 122mm TG	
	1974-76	50 130mm TG	
	1977	20 Type 55 and 56 APC	
	1977	20 Type 531 APC	
	1980	35 T-63 LT	
	1980	30 Type 531(?) APC	
	1981	20 BRDM-2 Scout Car	
	1981	50 D-30 122mm TH	
	1982	100 Type 54 122mm SPH	
	1982	100 Type 60 122mm TG	
Thailand	1985-86	30 T-59 MBT	
	1985	18 Type 59/1 130mm TG	
	1987-88	36 Type 59/1 130mm TG	
	1987	410 Type 531 APC	
	1987-88	53 T-69 MBT	
	1988-89	56 Type 81 122mm MRS	
	1988	50 Type 59/1 TG	
	1989-90	55 Type 69 Spaag AAV	
	1989-92	450 T-69 MBT	
	1990-91	360 Type 531 APC	
Zaire	1977	60 T-62 LT	
	1981	20 Type 60 122mm TG	
	1982	20 Type 66 152mm TH	
	1982(?)	100 Type 63 MRS	
	1982	50 Type 59/1 130mm TG	
Zambia	1983	4 T-34 MT	
	1983	4 Type 59/1 130mm TG	
Zimbabwe	1981	10 T-34 MT	
	1981	10 T-54 MBT	
	1983	20 Type 60 122mm TG	
	1984	20 T-63(?) LT	
	1985	35 T-59 MBT	

APPENDIX C

EXPORTS OF CHINESE MILITARY AIRCRAFT, 1951-92

Country	Year	Amount/Type	Other Information
Albania	1964-65	24 F-2 Fighter	
	1974	30 F-4 Fighter	
		20 F-7 Fighter	
	1985-86	25 F-6 Fighter	
Bangladesh	1975	4 MiG-15UTI Fighter/Trainer	
	1975-76	36 F-6 Fighter	
	1979	12 BT-6 Trainer	
	1983	10 F-6 Fighter	
	1989	21 F-7M Airguard Fighter	
	1989-90	20 A-5C Fantan Fighter	
	1992	40 F-6 Fighter	replacing aircraft
	1992	21 F-7M Airguard Fighter	lost in 1991 cyclone
Cambodia	1966-68	6 F-4 Fighter	
		4 An-2 Transport	
		12 MiG-15 UTI Trainer	
	1978	3 F-4 Fighter	
	1978	16 F-6 Fighter	
Chile	1991	2 Y-7 Transport	
Egypt	1979	40 F-6 Fighter	
	1980-86	110 F-7 Fighter	
	1982-84	50 F-6 Fighter	
Iran	1986-88	30 F-6 Fighter	via North Korea(?)
	1986-87	24 F-7 Fighter	
	1989	(?) F-6 Fighter	
	1992	72 F-7M Airguard Fighter	
Iraq	1988	4 B-6 Bomber	
Laos	1990	2 Y-12 Transport	
Myanmar	1991	12 F-6 Fighter	
	1990-92	12 F-7M Airguard Fighter	
	1991	2 Y-12 Transport	
North Korea	1950-51	100 MiG-15 Fighter	built in USSR
	1957	4 An-2 Transport	
	1958	80 MiG-15 Fighter	
	1958-59	40 Il-28 Bomber	
		20 Yak-18 Trainer	
	1959-60	300 F-4 Fighter	
		20 MiG-19 Fighter	
	1978	10 BT-6 Trainer	
	1982	40 A-5C Fantan Fighter	
	1986-88	100 F-6 Fighters	

Country	Year	Amount/Type	Other Information
North Vietnam	1964-65	10 MiG-15 Fighter	
		5 MiG-17 Fighter	
	1967-72	35 F-6 Fighter	with Soviet MiG-s
	1970-72	20 MiG-17 Fighter	
North Yemen	1989	6 F-7 Fighter	
Pakistan	1965	4 MiG-15 *UTI* Trainer	
	1966	4 Il-28 Bomber	
		60 F-6 Fighter	
	1971-74	95 F-6 Fighter	
	1978	24 F-4 Fighter	
	1980-81	20 F-6 Fighter	
	1984-85	52 A-5C Fantan Fighter	
	1986-89	60 F-7M Airguard Fighter	
	1986-88	98 A-5 Fantan-A Fighter	
	1987	25 K-8 Fighter/Trainer	
	1990-91	40 F-7P Skybolt Fighter	
	1990	40 F-7M Airguard Fighter	
Peru	1991	6 Y-12 Transport	
Romania	1973-74	18 H-5 Bomber	
Somalia	1980-81	28 F-6 Fighter	
Sri Lanka	1986-91	9 Y-12 Transport	
	1987-89	4 Y-8 Transport	
	1991	2 FT-5 Fighter	
	1991	4 F-7M Airguard Fighter	
Sudan	1970	28 FT-5 Fighter	
	1970-71	17 F-4 Fighter	
	1987	9 F-6 Fighter	
	1991	2 Y-8 Transport	
Tanzania	1973	12 F-4 Fighter	with one trainer
	1973-74	20 F-6 Fighter	
	1974	16 F-7 Fighter	
	1984	10 F-6 Fighter	
Thailand	1988	3 F-7 Fighter	for evaluation
United States	1988-89	6 F-4 Fighter	for training
	1988-89	6 F-6 Fighter	for training
	1988-89	12 F-7 Fighter	for training
Zambia	1978	12 BT-6 Trainer	
	1977-78	12 F-6 Fighter	
Zimbabwe	1984	12 F-4 Fighter	delivered via Pakistan
	1987	15 F-6 Fighter	
	1985-89	21 F-7M Airguard Fighter	
	1991	1 Y-12 Transport	

APPENDIX D

EXPORTS OF CHINESE NAVAL CRAFT, 1951-92

Country	Year	Amount/Type	Other Information
Algeria	1990	4 Hainan class PC	
Angola	1975	1 Shanghai class PC	
Bangladesh	1980-82	8 Shanghai class PC	
	1982-85	2 Hainan class PC	
	1983	4 Hegu class FAC	
	1983	4 P-4 class FAC	
	1988	4 Huangfen FAC	
	1988	4 Huchuan hydrofoil FAC	
	1989	1 Jianghu class frigate	
	1992	2 Huangfen FAC	
Cambodia	1968	3 coastal PC	
Cameroon	1976	2 Shanghai class PC	
Cape Verde	1975	2 Shanghai class PC	
Congo	1968	4 coastal PC	
Egypt	1982-86	6 Romeo class submarine	
	1983-84	8 Hainan class PC	
	1984	6 Hegu class FAC	
	1984-85	2 Jianghu class frigate	
Equatorial Guinea	1975	2 Shanghai class PC	
Ghana	1970	4 P-6 class torpedo boat	
Guinea	1973-76	6 Shanghai class PC	
Myanmar	1991	6 Shanghai class PC	
North Korea	1957-60	24 Minesweeper (coastal)	
	1967-78	23(?) Shanghai class PC	
	1968	8 P-6 class FAC	
	1975-92	14 Romeo class submarine	some licensed production
	1975-78	6 Hainan class PC	
	1980-83	2 Huangfen FAC	
North Vietnam	1957-64	6 P-6 class torpedo boat	
	1958-64	50 Swatow class gunboat	
	1966	8 Shanghai class PC	
	1968-69	8 LCT-6 landing craft	
	1973-74	2 Minesweeper	one ocean, one coastal

Country	Year	Amount/Type	Other Information
Pakistan	1972-73	12 Shanghai class PC	
	1973	4 Huchuan class hydrofoil FAC	
	1976, 1980	4 Hainan class PC	
	1981	4 Hegu class FAC	
	1984	4 Huangfen class FAC	
	1987	1 Fuqing class support ship	
	1989	2 Romeo class submarine (?)	
Romania	1973	10 Shanghai class PC	some licensed production
	1974	17 Huchuan class FAC	most licensed production
		13 Swatow class PC	all licensed production
Sierra Leone	1973	3 Shanghai class PC	
	1987	2 Shanghai class PC	
Sri Lanka	1972	5 Shanghai class PC	
	1980	2 Shanghai class PC	
	1991	3 Shanghai class PC	
Tanzania	1966	4 coastal PC	
	1971-72	6 Shanghai class PC	
	1975	4 Huchuan class hydrofoil FAC	
Thailand	1991-92	4 Jianghu class frigate	
	1993	2 Jiangdong class frigate	delivery expected in 1993
Tunisia	1977	2 Shanghai class PC	
Zaire	1976-78	4 Shanghai class PC	
	1978-79	4 Huchuan class hydrofoil FAC	

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