

Methods Used by the PRC to Export Military Technology from the United States

Once the PRC acquires advanced technology in the United States, it requires secure means to export the information or hardware out of the country. Weaknesses in U.S. customs can be exploited to smuggle classified or restricted U.S. technology.

Diplomatic pouches and traveling PRC diplomats offer another avenue for illegal technology exports. Almost every PRC Government commercial and diplomatic institution in the United States has personnel who facilitate science and technology acquisitions.

The Select Committee believes that these means of communicating with the PRC could have been exploited to smuggle nuclear weapons secrets from the United States.

These are some of the further means that have been used to illegally ship sensitive technology to the PRC:

- **In 1993, Bin Wu, a PRC national, was convicted of transferring night-vision technology to the PRC.** Wu used the U.S. postal system to get technology back to the PRC. He mailed the technology he collected directly to the PRC, mostly through an intermediary in Hong Kong.¹⁰⁶
- **The PRC uses false exportation documentation and has falsified end-user certificates.** In one case reviewed by the Select Committee, the Department of Commerce reported that a U.S. subsidiary of a PRC company used a common illegal export tactic when it falsely identified the machine tools it was exporting. The U.S. Customs Service also indicates that the PRC's use of false bills of sale and false end-use statements are common illegal export tactics.
- **The PRC has used at least one commercial air carrier to assist in its technology transfer efforts.** In 1996, Hong Kong Customs officials intercepted air-to-air missile parts

being shipped by CATIC aboard a commercial air carrier, Dragonair. Dragonair is owned by China International Trade and Investment Company (CITIC), the most powerful and visible PRC-controlled conglomerate, and the Civil Aviation Administration of China (CAAC).¹⁰⁷

- **A common PRC method for transferring U.S. technology to the PRC uses Hong Kong as the shipment point.** This method takes advantage of the fact that U.S. export controls on Hong Kong are significantly less restrictive than those applied to the rest of the PRC, allowing Hong Kong far easier access to militarily-sensitive technology.

The more relaxed controls on the export of militarily-sensitive technology to Hong Kong have been allowed to remain in place even though Hong Kong was absorbed by the PRC and PLA garrisons took control of the region on July 1, 1997. U.S. trade officials report that no inspections by the Hong Kong regional government nor by any other government, including the United States, are permitted when PLA vehicles cross the Hong Kong border.

Various U.S. Government analyses have raised concerns about the risk of the diversion of sensitive U.S. technologies not only to the PRC, but to third countries as well through Hong Kong because of the PRC's known use of Hong Kong to obtain sensitive technology.¹⁰⁸ Some controlled dual-use technologies can be exported from the United States to Hong Kong license-free, even though they have military applications that the PRC would find attractive for its military modernization efforts.

The Select Committee has seen indications that a sizeable number of Hong Kong enterprises serve as cover for PRC intelligence services, including the MSS. Therefore, it is likely that over time, these could provide the PRC with a much greater capability to target U.S. interests in Hong Kong.

U.S. Customs officials also concur that transshipment through Hong Kong is a common PRC tactic for the illegal transfer of technology.¹⁰⁹

of the programs and software that are being used on the computer, or remote electronic monitoring of the computer.¹⁵⁸

Commerce officials stated to GAO that they may have reviewed computer logs in the past, but do not do so anymore, and that they have not conducted any short-notice visits. They also acknowledged that they currently do not do any remote monitoring of HPC use anywhere and that, ultimately, monitoring compliance with safeguards plans and their conditions is the HPC exporter's responsibility.¹⁵⁹

Some U.S. High Performance Computer Exports to the PRC Have Violated U.S. Restrictions

During the 1990s, there have been several cases of export control violations involving computer technology shipments to the PRC. One ongoing case concerns the diversion of a Sun Microsystems HPC from Hong Kong to the PRC.¹⁶⁰

On December 26, 1996, a Hong Kong reseller for Sun Microsystems, Automated Systems Ltd., sold an HPC to the PRC Scientific Institute, a technical institute under the Chinese Academy of Sciences — a State laboratory specializing in parallel and distributed processing. At some point after the sale but before delivery, the computer was sold to Changsha Science and Technology Institute in Changsha, Hunan Province. The machine was delivered directly to that Institute in March 1997.¹⁶¹

Automated Systems of Hong Kong claimed to Sun officials in June 1997 that it had understood that the Changsha Institute was "an educational institute in Wuhan Province providing technological studies under the Ministry of Education." The end use there, according to Automated Systems, was to be for "education and research studies in the college and sometimes for application development for outside projects." Sun was recommended to contact the end user, the Changsha Institute, for more specific end-use information.¹⁶²

The HPC sale came to the attention of the Deputy Assistant Secretary for Export Enforcement, Frank Deliberti. He queried the U.S. Embassy in Beijing about the Changsha Institute. Deliberti gave the information he obtained to Sun Microsystems, which then initiated efforts to have its computer returned.¹⁶³

During the same period, the Foreign Commercial Officer at the U.S. Embassy in Beijing consulted his contacts at the PRC's Ministry of Foreign Trade and Economic Cooperation. The Ministry denied that the Changsha Institute was affiliated with the PRC military.¹⁶⁴

Subsequently, the Ministry called the FCO to inform him that the actual buyer of the computer was an entity called the Yuanwang Corporation, and that Sun Microsystems had been aware of this corporation's PRC military ties. Reportedly, Yuanwang is an entity of the Commission on Science, Technology, and Industry for National Defense (COSTIND). So far as the PRC's Ministry of Foreign Trade and Economic Cooperation reportedly could determine, the end-use statements that had been provided to Sun through Automated Systems of Hong Kong were totally fictitious. The Changsha Science and Technology Institute, according to the Ministry, did not exist.¹⁶⁵

The official position of the Ministry of Foreign Trade and Economic Cooperation was that the PRC Government would not help to obtain the return of the computer. The role of the PRC Government, the Ministry asserted, had been merely to help two private parties rectify a misunderstanding. In any event, the computer was returned to the United States on November 6, 1997.¹⁶⁶ The Commerce Department investigation reportedly is continuing.¹⁶⁷

A number of other violations of U.S. laws and regulations concerning computers exported to the PRC have been investigated by the Commerce Department:

New World Transtechnology

On December 20, 1996, New World Transtechnology of Galveston, Texas, pled guilty to charges that it violated the export control laws and engaged in false statements by illegally exporting controlled computers to a nuclear equipment factory in the PRC in August 1992. The company was also charged with attempting to illegally export an additional computer to the PRC through Hong Kong in October 1992. The company was sentenced to pay a \$10,000 criminal fine and a \$600 special assessment fee.¹⁶⁸

will grow at the rate of 1.5 million to 2 million units per year through the year 2000. According to figures provided by the Asia Technology Information Project, an independent research foundation, non-PRC manufacturers of PCs and workstations, including U.S. manufacturers, could expect to partake of a portion of the almost 2 million units expected to be imported for sale in the PRC in 1998.¹⁸⁶

The PRC Has a Limited Capability to Produce High Performance Computers

The PRC has demonstrated the capability to produce an HPC using U.S.-origin microprocessors over the current threshold of 7,000 MTOPS. The PRC "unveiled" a 10,000 MTOPS HPC — the Galaxy III — in 1997 based on Western microprocessors.

But PRC HPC application software lags farther behind world levels than its HPC systems. Also, despite the existence of a few PRC-produced HPCs based on Western components, the PRC cannot cost-effectively mass-produce HPCs currently. There really is no domestic HPC industry in the PRC today.

While it is difficult to ascertain the full measure of HPC resources that have been made available to the PRC from all sources, available data indicates that U.S. HPCs dominate the market in the PRC.¹⁸⁷

Although the PRC has a large market for workstations and high-end servers, there is a smaller market for parallel computers which is entirely dominated by non-PRC companies such as IBM, Silicon Graphics/Cray, and the Japanese NEC. However, there continues to be significant market resistance to Japanese HPC products in Asia, especially as U.S. products are beginning to have significant market penetration.¹⁸⁸

U.S. High Performance Computer Exports To the PRC Are Increasing Dramatically

A review of Commerce Department information regarding the total of HPC license applications that were received for the time frame January 1, 1992 to September 23, 1997, revealed the following:

- Only one HPC export license to Hong Kong (with a value of \$300,000) was rejected
- 100 HPC export licenses to the PRC (with a total value of \$11,831,140) were rejected by Commerce
- 37 HPC export licenses to Hong Kong (with a total value of \$55,879,177) were approved
- 23 HPC export licenses to the PRC for HPCs within the 2,000 to 7,000 MTOPS range (with a total value of \$28,067,626) were approved
- Two of the 23 HPC export licenses to the PRC for HPCs within the 11,000 to 12,800 MTOPS range (with a total value of \$2,550,000) were approved in 1998¹⁸⁹

The approximate total value of the HPCs exported, of whatever description, to both Hong Kong and the PRC, for the six-year period ending September 23, 1997, was only \$86 million.¹⁹⁰

The nine-month period between January 1998 and September 1998, however, saw U.S. exporters notify the Commerce Department of their intention to export 434 HPCs (in the 2,000 to 7,000 MTOPS range) to the PRC (total value \$96,882,799).¹⁹¹ Nine times the number of HPCs were exported in one-ninth the time.¹⁹²

During approximately the same time frame (calendar year 1998) it is estimated that 9,680,000 individual PCs and workstations were sold in the PRC. The market share that U.S. exporters could reasonably expect to benefit from was approximately 3,872,000 units, worth approximately \$1.8 billion.¹⁹³

Apparently, the proximate cause of U.S. computer manufacturers aggressively lobbying for the raising and maintaining of export thresholds above the PC level was to capture this \$1.8 billion per year market share.

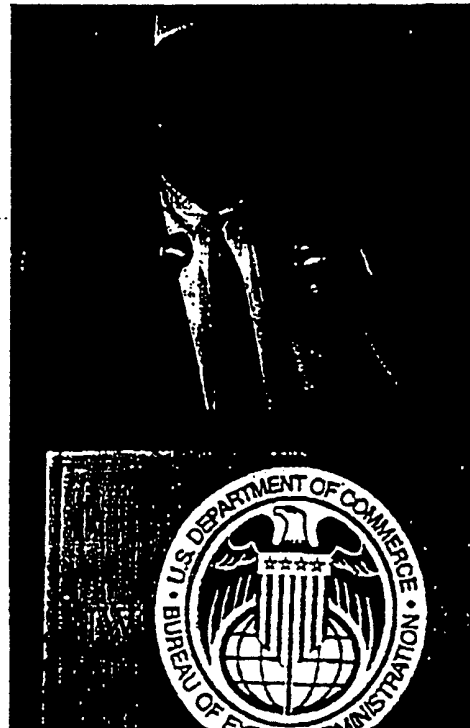
The United States dominates the PRC's HPC market, but U.S. exports clearly do not dominate the PRC's personal computer and workstation market.¹⁹⁴ The difference between the 460-unit, \$100 million HPC market described above, stretched over a six-year period, and the yearly 3.8 million-unit PC and workstation market, with a value of \$1.8 billion, is dramatic.

by Reinsch.²²⁶ He explains that this concept was applied to computers "because of the applicability of Moore's law." Moore's law—devised by Gordon Moore, one of the founders of Intel—essentially is that microprocessor capabilities double every 18 months. The concept of "forward looking foreign availability" has not been applied by the Department of Commerce to the liberalization of controls on items other than computers.²²⁷

Neither Reinsch nor other Commerce officials were apparently aware of the PRC's possible use of HPCs in nuclear weapons development when the policy decision to liberalize computer export controls was made. Commerce published the changes in computer export controls as amendments to the Export Administration Regulations in the *Federal Register* on January 25, 1996.²²⁸ The *Federal Register* notice stated that, in developing these reforms,

the Administration has determined that computers capable of up to 7,000 million theoretical operations per second (MTOPS) will become widely available in open international markets within the next two years [i.e., by January 1998]. The Administration has also determined that computers with performance capabilities at and above 10,000 MTOPS have a significant number of strategic applications.

The revised Export Administration Regulations identified four Computer Country Groups for export controls on computers:



Associated Press

Department of Commerce Under Secretary for Export Administration William Reinsch says the concept underlying the 1995 decision to liberalize computer export controls is known as "forward looking foreign availability." Thus, controls are based on the level of computing performance that it is expected will become available in the next 18 months to two years.

- **Tier 1 — most industrialized countries.** Exporters may ship computers with any level of performance without a license to these countries. The exporter is required to maintain records and must submit certain information to the Commerce Department if requested regarding shipments of computers with 2,000 MTOPS and above.
- **Tier 2 — countries with mixed proliferation and export control records.** Exporters may ship computers up to 10,000 MTOPS without a license to these countries. The exporter is required to maintain records on computer exports at 2,000 MTOPS and above, and to submit this information to the Commerce Department if requested. Exports of computers over 10,000 MTOPS require a license from the Commerce Department. (*Hong Kong is included in Tier 2.*)
- **Tier 3 — countries posing proliferation, diversion, or other security risks.** Exporters are allowed to ship computers up to 7,000 MTOPS without a license to these countries. The exporter must obtain a license from the Commerce Department to export computers above 2,000 MTOPS to military and proliferation end uses and end users, or to export computers above 7,000 MTOPS for all end uses and end users. Also, exporters must maintain records of exports of computers from 2,000 MTOPS to 7,000 MTOPS. (*The People's Republic of China is included in Tier 3.*)
- **Tier 4 — terrorist countries.** A license is required for exports or re-exports of any computer, regardless of MTOP level, to Cuba, Iran, Iraq, Libya, and North Korea. Exports or re-exports of computers to Syria and Sudan with a performance of 6 MTOPS and above are permitted with a license from the Commerce Department. (*Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria are included in Tier 4.*)²²⁹

Treatment of Hong Kong

In 1992, the United States granted preferential licensing treatment to Hong Kong as a result of its designation as a COCOM "cooperating country."²⁴⁰ The same year, the United States expressed its support for Hong Kong's autonomous status in the United States-Hong Kong Policy Act of 1992.²⁴¹

The 1992 Act called upon the U.S. Government to continue to treat Hong Kong as a separate territory in regard to economic and trade matters. It also provided for Hong Kong's continued access to sensitive U.S. technologies for so long as such technologies are protected.



Associated Press

On July 1, 1997, legal control of Hong Kong reverted to the People's Republic of China, and troops from the People's Liberation Army entered Hong Kong. U.S. export policy, however, has continued to give Hong Kong the pre-1997 liberal controls on militarily sensitive technologies. As a result, export controls on the PRC were effectively liberalized on July 1, 1997, permitting the transfer of many additional technologies of potential use to the PLA without prior review by the Department of Commerce.

THE U.S. GOVERNMENT 202 5512891 F. 21706

The result of the 1992 Act has been to continue a less restrictive export control policy for Hong Kong than for the rest of the PRC. Many more dual-use items may be exported to Hong Kong without prior Commerce review than may be exported to the PRC without review. Even when prior review is required, Commerce more readily grants export licenses to Hong Kong.

In contrast, more categories of dual-use items require prior review before export to the PRC, and the U.S. Government has refused to export certain items to the PRC that would have been allowed to go to Hong Kong without prior review or approval.²⁴²

Hong Kong reverted to the PRC in July 1997 under a negotiated arrangement between the PRC and the United Kingdom. Under the terms of a 1984 Joint Declaration, Beijing and London pledged that Hong Kong would become a Special Administrative Region of the PRC with a "high degree of autonomy" for 50 years. The U.S. Government has made clear its intent to change its export control policy towards Hong Kong only if there is evidence that Hong Kong authorities are unable to operate an effective export control system. The U.S. Government has pledged to monitor various indicators of Hong Kong's autonomy in export controls.²⁴³ The Commerce Department has reported to the General Accounting Office that it has established comprehensive benchmarks and gathered baseline information on each benchmark, and that it intends to evaluate this data on a monthly basis.²⁴⁴

State Department officials Lowell and Biancaniello say that the current level of diversion activity in Hong Kong is consistent with that which occurred in the period prior to Hong Kong's reversion to PRC sovereignty. However, Biancaniello says that checks are done more to ensure that all pre-reversion policies were still in place.²⁴⁵

The more relaxed controls on the export of militarily-sensitive technology to Hong Kong have been allowed to remain in place even though Hong Kong was absorbed by the PRC and PLA garrisons took control of the region on July 1, 1997. U.S. trade officials report that no inspections by the Hong Kong regional government nor by any other government, including the United States, are permitted when PLA vehicles cross the Hong Kong border.

Various U.S. Government analyses have raised concerns about the risk of the diversion of sensitive U.S. technologies not only to the PRC, but to third countries as well through Hong Kong because of the PRC's known use of Hong Kong to obtain sensitive technology.²⁴⁶ Some controlled dual-use technologies can be exported from the United States to Hong Kong license-free, even though they have military applications that the PRC would find attractive for its military modernization efforts.

The Select Committee has seen indications that a sizeable number of Hong Kong enterprises serve as cover for PRC intelligence services, including the MSS. Therefore, it is likely that over time, these could provide the PRC with a much greater capability to target U.S. interests in Hong Kong.

U.S. Customs officials also concur that transshipment through Hong Kong is a common PRC tactic for the illegal transfer of technology.²⁴⁷

John Huang, Classified U.S. Intelligence, and the PRC

In late 1993, the U.S. Department of Commerce hired John Huang as the Principal Deputy Assistant Secretary of Commerce for International Economic Policy.²⁴⁸

Prior to starting at the Department of Commerce, Huang had been the Lippo Group's principal executive in the United States. Lippo's principal partner in the PRC is China Resources (Holdings) Co., a PRC-owned corporation based in Hong Kong.²⁴⁹

According to Nicholas Eftimiades, a Defense Intelligence Agency analyst writing in his personal capacity, and Thomas R. Hampson, an investigator hired by the Senate Governmental Affairs Committee, China Resources is "an agent of espionage, economic, military, and political."²⁵⁰

China Resources is also one of several PRC companies (including China Aerospace Corporation) that share a controlling interest in Asia Pacific Mobile Telecommunications Satellite Co., Ltd (APMT).²⁵¹ The PRC-controlled APMT is preparing to use China Great Wall Industry Corporation to launch a constellation of Hughes satellites on PRC rockets.²⁵² The launches scheduled to date have required

Associated Press



In late 1993, John Huang was appointed to be the Clinton administration's Principal Deputy Assistant Secretary of Commerce for International Economic Policy. He had been the chief U.S. executive for the Lippo Group, a partner of the PRC-owned China Resources Company.

Commerce Department approval and presidential waivers of the Tiananmen Square sanctions.²⁵³

While at the Department of Commerce, Huang was provided with a wealth of classified material pertaining to the PRC, Taiwan, and other parts of Asia. He had a Top Secret clearance, but declined suggestions by his superiors that he increase that clearance to the Sensitive Compartmented Information (SCI) level (the level held by his predecessor).²⁵⁴

Between October 1994 and November 1995, Huang received 37 briefings from a representative of the Office of Intelligence Liaison at the Department of Commerce.²⁵⁵ While Huang's predecessor was briefed weekly, Huang received approximately 2.5 briefings per month.²⁵⁶

The vast majority of Huang's briefings focused on the PRC and Taiwan, including "raw intelligence" that disclosed the sources and methods of collection used by the U.S. intelligence community.²⁵⁷ The Office of Intelligence Liaison representatives indicated that Huang was not permitted to keep or take notes on raw intelligence reports and did not ask many questions or otherwise aggressively seek to expand the scope of his briefings.²⁵⁸

During the briefings, Huang reviewed and commented on raw intelligence reports about the PRC. Huang also signed receipts to retain finished intelligence products. The classified finished intelligence that Huang received during his tenure at Commerce included PRC economic and banking issues, technology transfer, polit-

ical developments in the PRC, and the Chinese Communist Party leadership. Huang commented on or kept copies of materials on these topics.

Huang was also given access by the Office of Intelligence Liaison to diplomatic cables classified at the Confidential or Secret level.²⁵⁹ Specifically, 25 to 100 classified cables were set aside for Huang each day.²⁶⁰

No record exists as to the substance of the cables that were reviewed by Huang.²⁶¹ Huang could have upgraded the level of the cable traffic made available to him to include Top Secret information, but never did so.²⁶²

Huang also had access to the intelligence reading room at the Commerce Department, as well as to classified materials sent to his supervisor, Charles Meissner,²⁶³ who had a higher level clearance.²⁶⁴ The three Office of Intelligence Liaison representatives who were interviewed by the Senate Committee on Governmental Affairs indicated that they were not personally aware of any instance in which Huang mishandled or divulged classified information.²⁶⁵

Huang maintained contact with representatives of the Lippo Group while he was at the Department of Commerce. During the 18 months that he was at Commerce, Huang called Lippo Bank 232 times, in addition to 29 calls or faxes to Lippo Headquarters in Indonesia. Huang also contacted Lippo consultant Maeley Tom on 61 occasions during the same period. Huang's records show 72 calls to Lippo joint venture partner C. Joseph Giroir.²⁶⁶

During his tenure at the Commerce Department, Huang used a visitor's office across the street at the Washington, D.C. branch of Stephens Inc., an Arkansas-based brokerage firm with "significant business ties to the Lippo Group."²⁶⁷ Stephens employees indicated that these visits were short in duration.²⁶⁸ Huang used this office "two, three times a week" most weeks, making telephone calls and "regularly" receiving faxes and packages addressed to him.²⁶⁹



China Resources (Holdings) Co., a PRC-owned corporation that is the Lippo Group's principal partner in the PRC, has been identified as "an agent of espionage, economic, military, and political."

32. Streamlined Licensing Procedures

With respect to controlled technologies and items that are not of greatest national security concern, current licensing procedures should be modified to streamline the process and provide greater transparency, predictability, and certainty.

33. Effect of Maintaining Looser National Security Controls for Hong Kong Since Its Absorption by PRC on July 1, 1997

The Select Committee recommends that appropriate congressional committees report legislation requiring appropriate Executive departments and agencies to conduct an initial study, followed by periodic reviews, of the sufficiency of customs arrangements maintained by Hong Kong with respect to the PRC and the appropriateness of continuing to treat the Hong Kong S.A.R. differently from the PRC for U.S. export control purposes. Such a study should consider, among other things, the implications of unmonitored border crossings by vehicles of the People's Liberation Army.

34. Mandatory Notice of PRC or Other Foreign Acquisition of U.S. National Security Industries

The Select Committee recommends that appropriate congressional committees report legislation amending the Defense Production Act of 1950 to require notice to the Committee on Foreign Investment in the United States (CFIUS) by all U.S. companies that conduct national security-related business of any planned merger, acquisition, or takeover of the company by a foreign entity or by a U.S. entity controlled by a foreign entity. The amendment also should require Executive departments and agencies to notify CFIUS of their knowledge of any such merger, acquisition, or takeover.