

Testimony of Gary Milhollin

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I am pleased to appear before this distinguished Subcommittee to discuss the effect of export controls on the spread of mass destruction weapons.

I will cover four topics. First, whether export controls are succeeding in protecting our security; second, whether they are now being weakened; third, whether violations are being punished; and fourth, what could be done to make export controls stronger.

The first thing to recognize about export controls is that they can work. They can make it more expensive, more time-consuming and more difficult for countries to develop mass destruction weapons. They can also buy the time needed to turn a country off the nuclear weapon path. Argentina and Brazil agreed to give up nuclear weapons in part because of the costs that export controls imposed upon them. And in Iraq, documents discovered by the United Nations inspectors showed that export controls on dual-use equipment seriously hampered the Iraqi nuclear weapon team. Export controls also stopped Iraq's drive to make a medium-range missile. In addition, these controls are now hampering India's effort to build an ICBM and will hinder the efforts of both India and Pakistan to build more efficient nuclear warheads.

But despite these successes, American export controls are now weaker than ever before in our history. Today's export controls are but a shadow of what they were in the 1980's, when Saddam Hussein was building his mass destruction war machine and we were still in the cold war. Since 1988, applications to the Commerce Department have dropped by roughly 90%. Cases have fallen from nearly 100,000 in 1989 to roughly 10,000 in fiscal year 2000. The reason is simple: fewer items are controlled, so fewer applications are required. When applications do come in, they are almost always approved. In fiscal year 2000, only 398 applications were denied – about four percent of the total received. Perhaps we could put up with this system in a time of peace, but we

now know that there are terrorist organizations willing to do us harm, and that weapons of mass destruction in their hands would threaten our way of life.

There is little doubt that the present system allows American exports to endanger our security. A recent example is American transfers to Huawei Technologies, the Chinese company caught helping Iraq improve its air defenses by outfitting them with fibre optic equipment. The assistance to Iraq was not approved by the United Nations, and thus violated the international embargo.

The history of Huawei shows how American exports to China can wind up threatening our own armed forces. At about the time when this company's help to Iraq was revealed earlier this year, Motorola had an export license application pending for permission to teach Huawei how to build high-speed switching and routing equipment – ideal for an air defense network. The equipment allows communications to be shuttled quickly across multiple transmission lines, increasing efficiency and reducing the risk from air attack.

Motorola is only the most recent example of American assistance. During the Clinton Administration, the Commerce Department allowed Huawei to buy high-performance computers worth \$685,700 from Digital Equipment Corporation, worth \$300,000 from IBM, worth \$71,000 from Hewlett Packard and worth \$38,200 from Sun Microsystems. In addition, Huawei got \$500,000 worth of telecommunication equipment from Qualcomm.

Still other American firms have transferred technology to Huawei through joint operations. Last year, Lucent Technologies agreed to set up a new joint research laboratory with Huawei “as a window for technical exchange” in microelectronics. AT&T signed a series of contracts to “optimize” Huawei's products so that, according to a Huawei vice president, Huawei can “become a serious global player.” And IBM agreed to sell Huawei switches, chips and processing technology. According to a Huawei spokesman, “collaborating with IBM will enable Huawei to...quickly deliver high-end telecommunications to our customers across the world.” Did IBM know that one of these customers might be Saddam Hussein?

As a result of deals like these, Huawei's sales rocketed to \$1.5 billion in 1999, to \$2.65 billion in 2000, and are projected to reach \$5 billion in 2001. These are extraordinary heights for a company that began in 1988 as a \$1,000 start-up. Real growth did not begin until the mid-1990s, when American help started rolling in. Texas Instruments started its assistance in 1994, and by 1997 had set up laboratories to help Huawei train engineers and develop digital signal processing technologies. Also in 1997,

Motorola and Huawei set up a joint laboratory to develop communication systems.

These exports no doubt make money for American companies, but they also threaten the lives of American pilots.

Huawei is not an isolated case. From 1989 to 1993, the U.S. Commerce Department approved six licenses for the export of equipment to China Precision Machinery Import-Export Corporation (CPMIEC). This company has supplied C-801 and C-802 anti-ship cruise missiles to Iran, and, according to United States intelligence, it shipped M-11 missiles to Pakistan in 1992. It was sanctioned by the United States in August 1993 for missile proliferation.

Among the items that the Commerce Department approved was a computer workstation for simulating wind effects. The ability to simulate wind effects is something the designer of an anti-ship missile could find useful. The missiles now pose a threat to U.S. ships and sailors in the Persian Gulf as well as to commercial shipping.

And there is the China National Electronics Import-Export Corporation (CEIEC). It markets cryptographic systems, radars and mine detection equipment, among other things. In the mid-1990s, this company sold Iran the powerful JY-14 surveillance radar – it can detect targets up to 300 kilometers away – that Iran integrated into its air defense system. This radar was probably built by using U.S. equipment. Microwave research equipment, a very large scale integrated system for testing integrated circuits, equipment for making semiconductors, and computer equipment were all licensed for export to this Chinese company by the Commerce Department from 1989 to 1993. Only last month, the *Washington Times* reported that Iran was installing another JY-14 radar near Iran's border with Afghanistan.

The second thing to recognize is that export controls are being weakened. In reaction to the attacks on September 11, one would expect the United States to search for ways to strengthen controls on the sales of dangerous commodities. Instead, we are going in the opposite direction. The United States has just dropped sanctions against a long list of dangerous buyers in India and Pakistan that were denied U.S. exports after those two countries tested nuclear weapons in 1998. It seems hard to believe, but our response to a terrorist attack on American soil was to loosen our export controls and make it easier for foreign countries to build weapons of mass destruction.

I would like to describe the activities of some of these companies. First is Hindustan Aeronautics Ltd. It produces major components for India's largest rockets, such as the Polar Satellite Launch Vehicle (PSLV). Here is a photograph of some rocket nose cones that this company makes.

Sanctions were also dropped against the firm Godrej and Boyce. It too produces major components for India's rockets, such as engines, motor casings and heat shields. At left is a photograph of a liquid-fueled rocket engine that this firm produces.

India's National Aerospace Laboratory performs rocket and missile research. It does wind tunnel testing, ground vibration testing, and it analyzed the first flight test of the Prithvi missile. At right, I have included a photograph of a rocket model wired for testing in this firm's wind tunnel. It is now free to import American dual-use items.

And there is Walchandnagar Industries, which produces major components for uninspected Indian reactors that make plutonium free for use in atomic bombs. At left is a photograph of an end shield that this company produced for the Madras-2 nuclear reactor. Walchandnagar too was freed of export control sanctions.

I would like to emphasize that all of these firms are unquestionably making weapons of mass destruction, and all of them have just been cleared for American exports.

Third, there is the problem of enforcement. A company that violates the law by not applying for a license is rarely punished. For example, in 1996 Silicon Graphics Inc. of Mountain View, Calif., sold four supercomputers to one of Russia's leading nuclear weapon laboratories without the required export license. The U.S. computers were 10 times more powerful than anything the Russians had before. After the deal was done, Russia's nuclear chief told the press that Russia would start designing its warheads with simulated explosions using the American computers. There is strong evidence that Silicon Graphics broke the law. It clearly needed an export license and did not get one. The case went to a federal grand jury in 1997, where it has not been heard from since.

In 1999, the Cox Committee found that Hughes Electronics and Loral Space and Communications, two big American satellite makers, "deliberately acted without the

legally required licenses and violated U.S. export control laws" when they helped China improve its largest rockets in 1995 and 1996. To boost their profits, these U.S. firms gave China technology that could, in the committee's words, increase "the reliability of all PRC ballistic missiles." These cases too went to a federal grand jury well over three years ago and have not been heard from since. I recommend that this Subcommittee ask the Department of Justice to report on their status.

The United States can do a much better job of export control. One improvement would be to make the process transparent. We could start down that path by publishing a comprehensive list of dangerous buyers. The United States now publishes such a list in the Federal Register but it is far too small. The list for China contains only nineteen names. Our government has claimed that a more extensive list would reveal intelligence sources and set off diplomatic conflicts. But it is well-known that scores, if not hundreds of firms in China are active in nuclear, missile and military production. Their names are not secret. It is silly to pretend we don't know they exist. The same is true of the Indian organizations I mentioned above and scores of other Indian organizations like them. The computer industry, in fact, would welcome a list of dangerous buyers. Industry would prefer to spend its scarce marketing dollars on buyers that don't present problems.

As a first step in building such a list, I have attached to my testimony the names of 50 firms that are well-known parts of China's nuclear, missile and military complex. I should point out that this is not a blacklist. It is only a warning list. These names have been selected on the basis of reliable, unclassified information. I recommend that Congress submit these names to the Department of State, and ask for an opinion on whether the names should be included on the published U.S. export warning list. If the State Department judges that these firms should be included, then the Subcommittee should ask the Commerce Department to add the names to the "entity" list in Part 744 of the Export Administration Regulations. American firms should not unwittingly make sales that undermine American security.

Appendix to the testimony of Gary Milhollin, November 7, 2001

Chinese organizations that should be placed on the U.S. "entities list."

22nd Construction and Installation Corporation (Yichang)

23rd Construction Corporation (Beijing)

Aviation Industries of China I and II (AVIC) (Beijing)

Beijing Institute of Aerodynamics (BIA) (Beijing)

Beijing Institute of Electromechanical Engineering (Beijing)
Beijing Institute of Electronic Systems Engineering (Beijing)
Beijing Institute of Nuclear Engineering (BINE) (Beijing)
Beijing Institute of Space System Engineering (Beijing)
Beijing Institute of Technology (BIT) (Beijing)
Beijing Research Institute of Uranium Geology (BRIUG) (Beijing)
Beijing Wan Yuan Industry Corporation (BWYIC) (also known as the China Academy of Launch Vehicle Technology [CALT]) (Beijing)
Chengdu Aircraft Industrial Corporation (CAIC) (Chengdu)
China Aerospace International Holdings Ltd. (CASIL) (Hong Kong)
China Aerospace Machinery and Electronics Corporation (CAMEC) (Beijing)
China Aerospace Science and Technology Corporation (CASC) (Beijing)
China Chang Feng Mechanics and Electronics Technology Academy (Beijing)
China Great Wall Industries Corporation (CGWIC) (Beijing)
China Haiying Electro-Mechanical Technology Academy (Beijing)
China Hexi Chemistry and Machinery Company (Beijing)
China Nanchang Aircraft Manufacturing Company (Nanchang)
China National Aero-Technology Import-Export Corporation (CATIC) (Beijing)
China National Aero-Technology International Supply Corporation (CATIC Supply) (Nanchang)
China National Nuclear Corporation (CNNC) (Beijing)
China North Chemical Industries Corporation (NOCINCO) (Beijing)
China North Industries Corporation (NORINCO) (Beijing)
China North Opto-electro Industries Corporation (OEC) (Beijing)
China Nuclear Energy Industry Corporation (CNEIC) (Beijing)
China Precision Machinery Import-Export Corporation (CPMIEC) (Beijing)
China Sanjiang Space Group (Wuhan)
Chinese Academy of Sciences (CAS) (Beijing)

Commission on Science, Technology and Industry for National Defense (COSTIND)
East China Research Institute of Electronic Engineering (ECRIEE) (Hefei)
Harbin Engineering University (Harbin)
Harbin Institute of Technology (HIT) (Harbin)
Hua Xing Construction Company (HXCC) (Yizheng)
Hubei Red Star Chemical Institute (also known as Research Institute 42) (Xiangfan)
Luoyang Electro-optical Technology Development Center (LEODC) (Luoyang)
Nanjing University of Science and Technology (Nanjing)
National University of Defense Technology (NUDT) (Changsha)

Nuclear Power Institute of China (NPIC) (Chengdu)
Research Institute 31 (Beijing)
Shaanxi Institute of Power Machinery (also known as Research Institute 41) (Shaanxi)
Shanghai Institute of Electromechanical Engineering (Shanghai)
Shanghai Power Equipment Research Institute (SPERI) (Shanghai)
Shanghai Xinfeng Chemical Engineering Research Institute (Shanghai)
Shanghai Xinli Research Institute of Power Equipment (Shanghai)
Shanxi Xingan Chemical Material Plant (Taiyuan)
Shenyang Aircraft Corporation (SAC) (Shenyang)
Shenyang Aircraft Research Institute (SARI) (Shenyang)

Xidian University (also known as the Xian University of Electronic Science and Technology) (Xian)