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Report on Impacts to U.S. National Security of Advanced Satellite Technology Exports to the People's Republic of China (PRC), and

Report on the PRC's Efforts to Influence U.S. Policy

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BASIS FOR THE COMMITTEE'S INVESTIGATION

In April 1998, the New York Times reported that the Justice Department was conducting a criminal investigation of possible export control law violations by Loral Space and Communications Ltd. and Hughes Electronics Corporation. News reports cited a classified Pentagon analysis that the transfer had harmed U.S. national security by providing expertise to the military ballistic missile programs of the People's Republic of China (PRC). The press also noted that, in February 1998, the President had approved a waiver of Tiananmen Square sanctions for a subsequent Loral satellite launch despite Justice Department concerns about the possible effect of such approval on an ongoing criminal investigation.

On May 15, 1998, the New York Times reported that Johnny Chung, a Democratic Party fundraiser being investigated for improprieties during the 1996 presidential campaign, told Department of Justice investigators that an executive with a PRC aerospace company gave him $300,000 to donate to President Clinton's 1996 reelection campaign. These reports came against a backdrop of earlier reporting and prior congressional investigations of a PRC Government plan to influence the American political process.

On May 21, 1998, the Senate Select Committee on Intelligence (SSCI) agreed to lead an investigation into the satellite technology transfer issue and allegations of a PRC program to influence the U.S. political process.

On June 2, 1998, the Committee unanimously approved Terms of Reference for two investigations. The first concerned the impact on U.S. national security of the alleged transfer of advanced U.S. satellite and related technology to the PRC. The second examined reports of a covert PRC Government program to influence the political process in the United States during the 1996 election cycle.

In the course of its investigations, the Committee held seven hearings and numerous staff briefings and interviews. Witnesses included the Director of Central Intelligence, the Attorney General, the Director of the Federal Bureau of Investigation (FBI) and expert witnesses from the Central Intelligence Agency (CIA), the Defense Department's Defense Technology Security Administration (DTSA), the Department of State, the National Air Intelligence Center (NAIC), the National Security Agency (NSA), Defense Intelligence Agency (DIA), and the General Accounting Office (GAO). Committee staff also reviewed tens of thousands of documents provided by Executive departments and agencies and U.S. satellite

manufacturers, and produced analyses for the Committee's use based on those documents.

The Committee decided to release a public document fully cognizant of the difficulties of discussing classified information within an unclassified report. Intelligence sources and methods have been fully protected in the writing of this report. Our findings and recommendations included in this executive summary are substantiated by both classified and unclassified material. Although review of the classified material is necessary to understand the issues involved, the Committee believes the significant national security threats posed by possible technology transfers to the PRC and PRC attempts to influence U.S. policymaking merit public knowledge of as much information as possible.

Evolution of U.S. Policy on American Satellite Launches on PRC Space Launch Vehicles

On January 28, 1986, the space shuttle Challenger exploded shortly after launch. Prior to this event, both the U.S. Government and U.S. commercial satellite companies had decided to rely on the space shuttle program as their primary launch vehicle. Later that year, the U.S. experienced launch failures with the expendable Titan and Delta rockets as well. As a result, the Reagan Administration revised U.S. space launch policy from primary dependence on the shuttle to a "mixed fleet" of launch vehicles.

The change in space launch policy created a demand for alternative launch services by the commercial satellite industry. This demand helped foster both a nascent U.S. commercial space launch industry and a desire by the commercial satellite industry to use foreign space launch services. Foreign launch services had the capacity to meet U.S. commercial satellite needs and, in part due to government subsidies, could offer launches at a price below that of American launch service providers.

American satellite companies wanted to have the option of using the PRC's space history to launch their satellites into orbit. The PRC offered satellite launch rates far below other Western nations and had successfully orbited its own satellites in the past. However, the use of PRC space launch vehicles entailed technology transfer risks. The China Great Wall Industry Corporation (CGWIC), which provides space launch services for the PRC, also produces missile technology for the People's Liberation Army (PLA) and for export. Further, CGWIC is a subsidiary of China Aerospace Corporation, formerly the Ministry of Aerospace, and sister company to the China National Precision Machinery Import and Export Corporation, which produces the PRC's ballistic missiles. In fact, the Long March series of rockets used to launch American satellites shares components with the PRC's CSS–4 Intercontinental Ballistic Missile (ICBM). According to the Washington Times of May 1, 1998, the PRC has deployed eighteen nuclear-armed CSS–4 ICBMs, with a substantial number of these missiles targeting the United States. The PRC is also developing a new generation of more advanced mobile ICBMs, which would enhance its ability to target the United States. While this threat is considerably smaller than the threat posed by Russia's nuclear arsenal, the PRC has the

ability to inflict great damage on American military and civilian targets.

Most Reagan Administration officials supported the decision to license exports of U.S. satellites to the PRC for launch. The American satellite industry was both technologically ahead of foreign competitors and economically significant to the United States. Such officials believed that, with the proper technology transfer safeguards, a policy that permitted American satellites to be launched on PRC rockets would help the U.S. satellite industry maintain its technological edge and its employment base. This policy fit within the Cold War strategy of treating the PRC as a "counterweight to Soviet military power;" the PRC was cooperating with the United States in a number of areas, including Afghanistan. An element of this policy consisted of differentiating between U.S. export control policies toward the Soviet Union and the PRC. On the other hand, some Reagan Administration officials believed that allowing American satellite companies to use PRC launch service providers would provide financial benefits to these companies' military divisions and offer opportunities for launch vehicle technology to be transferred either advertently or inadvertently to the PRC. This disagreement continued during the Bush and Clinton Administrations.

On September 9, 1988, the Reagan Administration notified Congress that it would grant the first export licenses for the use of PRC space launch services, provided that the United States and the PRC reached agreements concerning security procedures to safeguard U.S. satellite technology, launch liability, pricing, and trade practices. The security agreement was signed on December 17, 1988, and then renegotiated and re-signed on February 11, 1993. Under the agreement, the United States would provide Defense Department monitors to oversee discussions between American and PRC engineers to protect against technology and methodology transfer, and the satellite manufacturer would provide 24-hour security to protect the satellite. In January 1989 and March 1995, the United States and the PRC entered into multi-year agreements under which the PRC agreed to charge prices within fifteen percent of prevailing Western commercial launch services rates and limit the number of U.S.-built satellites that would be launched by the PRC. The U.S.–PRC agreement establishing liability responsibilities of the PRC Government during launch campaigns was signed on December 17, 1988.

On June 4, 1989, the PRC Government used its military forces to crack down on political demonstrators in Tiananmen Square. In November 1989, Congress enacted Tiananmen Square sanctions against the PRC. The law authorized the President to invoke the national interest in order to permit the launch of U.S.-built satellites in the PRC. The exercise of such authority is known as a "waiver" of Tiananmen Square sanctions. On December 19, 1989, President Bush exercised this authority to permit the export for launch in the PRC of the AsiaSat1 satellite. On February 16, 1990, President Bush imposed additional sanctions on the PRC as required in the Foreign Relations Authorization Act for Fiscal Years 1990 and 1991 (P.L. 101–246, February 16, 1990).

Since 1990, the United States has approved twenty satellite projects for thirty-three launches in the PRC. President Bush authorized the launch of fourteen satellites in the PRC; of these, twelve were launched. President Clinton authorized the launch of nineteen satellites; of these, sixteen have been launched as of the date of this report.

When this export policy was implemented, the State Department was responsible for issuing export licenses for all satellites, which, because of their technologies and potential military utility, were governed by U.S. Munitions List guidelines. The State Department by law and the Defense Department by practice had authority to reject satellite export license applications on national security grounds. Following a review of export regulations, the Bush Administration decided in 1992 to transfer jurisdiction over licenses for the export of communications satellites that did not contain "militarily significant" technology from the State Department to the Commerce Control List (CCL) overseen by the Commerce Department.

In spite of initial opposition by the State Department, which was withdrawn, the Clinton Administration, on November 5, 1996, transferred jurisdiction for issuing export licenses for all completely assembled commercial satellite systems to the Commerce Department; however, responsibility to license the export of "militarily significant" components not incorporated into a satellite prior to export remained with the State Department. Under the process established by Executive Order in December 1995, the State Department and the Defense Department could appeal to the President satellite export license decisions made by the Commerce Department without regaining their pre-1992 authority. However, neither the State Department nor the Defense Department ever appealed any satellite export decisions made by Commerce. Nor did either Department object to a presidential waiver after 1990.

Each satellite "launch campaign" consists of a series of technical interchange meetings and other interactions between U.S. satellite engineers and the launch service provider. During such meetings, the two sides exchanged detailed information on satellite and launch vehicle specifications, capabilities, technical requirements, satellite-launch vehicle integration, and other matters critical to a successful launch to the designated orbit. This information includes "form, fit, and function" information covered by Commerce licenses, and technology interactions governed by State licenses. The meetings, which typically last several days, generally take place in both the United States and the PRC. The campaigns themselves generally take from one to three years. Failed launches lead to additional meetings and interchanges to determine the source of the failure. Such interactions between American and PRC engineers provided the PRC with the opportunity to obtain technology and know-how applicable to both civilian and military space programs.

Satellite export licenses granted under State Department jurisdiction required Defense Department monitors to be present during all technical discussions between American companies and PRC launch service providers. The Commerce Department, however, believed that monitors were not required for satellites once they were placed on the Commerce Control List. The State Department and

Defense Department disagreed with the Commerce Department interpretation.

Under the Commerce Department's jurisdiction, there were three unmonitored launches of U.S. satellites on PRC rockets: the Apstar-2 launch in January 1995; the Apstar 1A launch in July 1996; and the Chinasat-7 launch in August 1996. All of these launches involved satellites built by Hughes Electronics Corporation. All took place prior to the November 5, 1996, decision to transfer jurisdiction over exports of fully assembled satellites to the Commerce Department, with new procedures, but after the 1992 decision to transfer from State to Commerce jurisdiction the export of satellites without militarily significant technology.

President Clinton issued an amendment to Executive Order 12981 on October 15, 1996, requiring the Commerce Department to forward all satellite export licenses for review by the Departments of State, Defense, Energy, and the Arms Control and Disarmament Agency. From that point onward, the Defense Department was authorized to send monitors to all satellite launch campaigns. Defense Department documents indicate that monitors may not have attended all meetings concerning Lockheed Martin Chinastar 1 and other campaigns due to personnel and resource constraints. Incomplete record keeping by the Defense Technical Security Administration (DTSA), the Defense Department agency in charge of monitoring launch campaigns, prevents a complete understanding of which meetings were or were not monitored.

The PRC has experienced three catastrophic failures attempting to launch American satellites into orbit. On December 21, 1992, the Long March 2E rocket attempting to launch the Optus-B2 satellite produced by Hughes experienced an explosion en route to orbit, destroying the satellite. On January 26, 1995, the Long March 2E rocket attempting to launch the Hughes Apstar-2 satellite exploded after liftoff. On February 15, 1996, the Long March 3B rocket launching the Loral Intelsat 708 satellite veered off course and crashed into a nearby village.

After each of these events, American companies were involved in investigations to determine the causes of the launch failure. However, not all of these launch failure investigations were coordinated with the U.S. Government, and Defense Department monitors were not present at any meetings with PRC representatives during the course of the Apstar 2 and Intelsat 708 investigations.

1. To what extent, from 1988 to the present, have U.S. export control policies regarding the launch of U.S. manufactured communications satellites on PRC launch vehicles affected U.S. national security?

Introduction

On June 24, 1998, David Tarbell, Director of DTSA, the Defense Department agency tasked to prevent technology transfer during satellite launches, informed the Committee that "[i]t has been and remains U.S. policy not to transfer technology to China that would improve its missile capabilities. In reviewing [technology transfer] it is against the standard of no technology transfer to improve China's missile-related capabilities that we judge the national security

impact." During its investigation, the Committee accepted this standard and found that it has not been met. Technical analyses and methodologies provided by American satellite companies to the PRC during various satellite launch campaigns resulted in the transfer to the PRC of technical know-how. Such transfer enables the PRC to improve its present and future space launch vehicles and intercontinental ballistic missiles (ICBMs). If such transfer results in the PRC's integration of this technology into its missile programs, national security will have been damaged.

Committee findings and conclusions

The Committee's conclusions with respect to technology transfer are based on the evidence of technology transfers to the PRC's space launch industry described below, the substantial similarities between space launch vehicles and ballistic missile technology (the CIA has described space launch vehicles as ballistic missiles in disguise), the integration of the PRC's space launch and ballistic missile industries, the PRC's intention to modernize and upgrade its ballistic missile force, evidence that U.S. know-how was incorporated into the PRC space launch program, and the Committee's assumption that any improvements in the PRC's space launch vehicles would be incorporated wherever practicable in the PRC's military ballistic missile program.

The Committee concludes that the technical information transferred during satellite launch campaigns enables the PRC to improve its present and future space launch vehicles and ICBMs. Because such analyses and methodologies are also applicable to the development of other missile systems, the Committee believes that, where practicable, the PRC will use the transferred information to improve its short range ballistic missiles (SRBMs), intermediate range ballistic missiles (IRBMs), and related technology. These missiles could threaten U.S. forces stationed in Japan and Korea, as well as allies in the region.

In the past, the PRC has proliferated SRBMs, IRBMs, and their related technology to potential U.S. adversaries such as Iran and to countries such as Pakistan where the presence of advanced weapons increases regional instability. U.S. national security interests already may have been harmed if the PRC used the transferred information to improve these proliferated missile systems. Or U.S. national security may be harmed in the future if the PRC proliferates missile systems or components that have been improved as a result of the technology transfer.

The Committee further finds that improvements to the PRC's space launch capability increases the PRC's ability to use space for military reconnaissance, communications, and meteorology. The PRC's enhanced ability to use space in turn may pose challenges to U.S. national security interests and capabilities.

The perfection of a flight-worthy PRC Smart Dispenser is an example of the pulling effect leading to improved space launch services inherent in U.S. use of such services. The PRC had indigenous capability to develop a Smart Dispenser prior to Motorola's request for proposals for the Iridium project. Undertaking this project resulted in a flight-worthy dispenser. Analysts differ as to the military significance of this development.

The Committee found that decisions in 1992 and 1996 transferring licensing jurisdiction over commercial satellites from the State Department to the Commerce Department emphasized commercial interests over national security and other concerns. The 1992 decision shifted jurisdiction over the export of commercial satellites without militarily significant characteristics from the State Department to the Commerce Department. This action reduced the ability of the State and Defense Departments to block such exports on national security grounds. On December 5, 1995, Executive Order 12981 gave the State Department, the Defense Department, the Energy Department, and the Arms Control and Disarmament Agency a role in a formal interagency process for reviewing the export of commercial satellites under Commerce Department jurisdiction since 1992. The process provided for majority decision on exports, with a right to appeal, ultimately to the President. In 1996, jurisdiction over the export of all remaining commercial satellites was transferred to Commerce.

The 1996 decision had the additional consequence of completing the process of removing commercial satellites from categories of goods that would not be exported when the U.S. government imposed Missile Technology Control Regime (MTCR) Category II sanctions. This step, at least in part, reflected industry pressure since 1992 to bring about such a policy change. In August 1993, State Department policy included all U.S. satellites in MTCR Category II sanctions. The Commerce Department argued that no satellites should be affected. U.S. satellite manufacturers, in particular Hughes, lobbied hard to remove satellites from missile sanctions. To resolve the issue, in November 1993, the President accepted a National Security Council (NSC) recommendation with respect to Category II sanctions: State should continue to be able to block exports of satellites remaining on the Munitions List, but permitted the export of satellites that had been transferred to the Commerce Department in 1992.

The transfer of the export of commercial satellites to Commerce Department jurisdiction affected U.S. national security. Some believe the national security was enhanced by having the PRC use U.S. satellites and by maintaining strong international demand for our satellites. On the other hand, some believe this step diminished the impact of U.S. sanctions against the PRC for its proliferation practices, thus weakening the non-proliferation regime generally. The Committee concludes that the return of commercial satellites to State Department licensing jurisdiction pursuant to the Strom Thurmond National Defense Authorization Act for Fiscal Year 1999 will result in increased attention to preventing technology transfer and protecting national security interests.

The Committee identified a failure to successive Administrations to provide adequate funds, staff, and training to DTSA officials responsible for monitoring U.S.-PRC satellite cooperation. As a result of confusion engendered by the 1992 decision, Defense Department monitors were not present during three satellite launch campaigns in 1993–96. Existing documents show that no monitors were present in 1997 at the fourth technical interchange meeting of the Chinastar 1 campaign. Records suggest, but do not confirm, the absence of monitors at other meetings. The Committee believes these

unmonitored meetings provided the PRC opportunities to collect technical information. The Committee would be surprised if the PRC did not take advantage of such opportunities to obtain technology. The Committee recommends substantial changes in the launch monitor program.

From 1988 through today, the Intelligence Community has generated and disseminated to U.S. policymakers extensive intelligence reporting on issues relevant to export policy decisions. Such reporting covers the PRC's interest in obtaining advanced U.S. technologies, the integration of the PRC's civilian and military launch vehicle programs, PRC military modernization, and PRC missile proliferation.

The Committee found that intelligence reporting dating from at least the 1980s indicated that the PRC Government has had a strategic, coordinated effort to collect technological products and information from the U.S. Government and private companies. According to intelligence reporting, the PRC Government had devoted significant resources and effort at collecting all types of technology from American sources, whether of military or commercial value or both. Although intelligence reports detailing widespread and organized PRC efforts to collect technical knowledge were available to officials involved with the satellite export program, weaknesses in procedures and insufficient resources to support the monitoring effort detracted from the overall program.

The Committee concludes that U.S. Government officials failed to take seriously enough the counterintelligence threat during satellite launch campaigns. As a result, monitors were inadequately trained and rewarded and of insufficient number. An inadequate effort was made to ensure that employees of U.S. satellite manufacturers were trained and prepared to deal with PRC efforts to obtain U.S. know-how.

a. Which specific PRC launches of U.S. manufactured satellites, if any, facilitated the transmittal of technical knowledge to the PRC launch industry?

Introduction

The Committee found that investigations into the Hughes Apstar 2 and the Loral Intelsat 708 satellite launch failures facilitated the transmittal of technical knowledge to the PRC launch industry. The Committee is concerned that unmonitored launch campaigns and technical interchange meetings provided the PRC with the opportunity to obtain additional technical information. The Committee also is concerned that transfers may have occurred in the course of licensed, monitored activities.

Committee findings and conclusions

Apstar 2

On January 26, 1995, the Long March 2E rocket attempting to launch the Hughes Apstar 2 satellite exploded after liftoff. Hughes had determined that under Commerce Department guidelines in effect at the time, launch monitors were not required for satellites exported under the Commerce Commodity Control List system.

Hughes also concluded that it did not need a State Department license. Hughes therefore did not request monitors for this launch.

The China Academy of Launch Technology (CALT) conducted its own investigation into the launch failure. However, at the behest of insurance companies, Hughes initiated a separate investigation of the launch failure, which included extensive interchanges with PRC engineers. Hughes prepared a written analysis of the launch failure, which was shared with both the insurance companies and the CALT. Because the export license was approved by the Commerce Department, the Hughes failure analysis was approved for release solely by the Commerce Department. Under the existing regulations, Hughes needed a State Department license to conduct these meetings. However, neither Hughes nor the Commerce Department alerted the State Department of this investigation. As a result, Defense Department monitors were not present during the launch failure review, and neither State nor Defense Department officials reviewed the written analysis provided to CALT.

In connection with their assessment in 1998 of the Apstar 2 launch failure investigation, the Defense and State Departments had access only to an incomplete set of the documents provided by Hughes to the PRC. The Department of Defense determined that "it is reasonable to infer that, during the close collaboration between Hughes and Chinese engineers, Hughes imparted to the Chinese sufficient know-how to correct the overall deficiencies in their approach to Coupled Loads Analysis and the Chinese Finite Elements Model." "Coupled Loads Analysis," the report noted, "is a critically important process for validating the integrity of a launch vehicle to survive in various flight environments." Coupled loads analysis applies equally to space launch vehicles and ballistic missiles. During this collaboration, Hughes engineers provided conclusions that "were very specific and identified the need for modifications in the Chinese launch vehicle fairing design and launch operations," along with "insight into U.S. diagnostic techniques for assessing defects in launch vehicle and satellite design."

The Defense Department concluded that,

> The specific benefits derived from the APSTAR II launch failure investigation for Chinese missile programs did not likely alter the strategic military balance between the United States and China. However, in light of the strict standards of U.S. policy not to assist China in improving its satellite and missile-related capabilities, DoD believes that the scope and content of the launch failure investigation conducted by Hughes with the Chinese following the January 1995 APSTAR II failure raises national security concerns both with regard to violating those standards and to potentially contributing to China's missile capabilities.

The State Department Bureau of Intelligence and Research also reviewed the Apstar 2 launch failure analysis documents that Hughes provided to the PRC. The State Department report noted the extensive assistance provided by Hughes in the areas of anomaly analysis/accident investigation; telemetry analysis; coupled loads analysis, including "sharing of modeling, calculations, methodologies, etc.;" hardware design and manufacturing, and testing.

Comparing the Apstar 2 analysis with the Intelsat 708 launch failure investigation one year later, the State Department determined that in both cases, U.S. satellite makers "identified common themes with regard to Chinese deficiencies in launch operations, anomaly analysis, modeling and simulation, manufacturing, and quality control, etc." The State Department concluded that, "[t]he lessons learned by the Chinese are inherently applicable to their missile programs as well, since SLVs [space launch vehicles] and ICBMs share many common technologies."

Intelsat 708

On February 15, 1996, a PRC rocket was used to launch a Loral Intelsat 708 satellite under a State Department license. Immediately after liftoff, the rocket crashed into a nearby village. The CGWIC investigated the launch failure in the February–April 1996 period. Insurance companies involved with the Intelsat 708 launch insisted on an independent non-PRC determination of problems with the Long March rockets before additional launches were to take place. Loral formed an Independent Review Commission (IRC), which was chaired by a senior Loral scientist and included representatives from Hughes and other aerospace companies, to review the findings of the PRC investigation. Loral representatives said that it had discussed this review with U.S. officials.

Initially, according to Loral, the IRC only obtained information from the CGWIC for use in its own analysis. However, in April 1996, the CGWIC requested that the IRC certify the PRC's technical evaluation of the launch failure. The IRC held two sets of meetings with PRC engineers, one in Beijing and one in Palo Alto. The discussions between the IRC and the PRC during this review were not monitored. On April 25, 1996, Loral sent the CGWIC minutes of the first IRC meeting. On May 6, Loral faxed minutes of the second IRC meeting to the CGWIC. On May 7, Loral sent a draft preliminary report of the IRC analysis to the CGWIC. On May 10, 1996, Loral sent the preliminary report to the PRC. Loral sent these documents without prior State Department approval. In April 1997, as part of its briefing to the insurers for the Loral Mabuhay launch program, CALT stated it was implementing forty-four correction actions. These actions, in part, were a reaction to the IRC failure analysis.

Initially, Intelligence Community agencies differed on the significance of the IRC review of the Intelsat 708 launch failure. The Intelligence Community subsequently agreed that:

- the advice given to the PRC by the IRC could help to reinforce or add vigor to the employment of the PRC's design and test practices;
- the advice provided could improve the reliability of PRC space launch vehicles; and
- the PRC will try to exploit any information of a new or different nature which could and probably would eventually find its way into their space launch and ballistic missile programs.

Differences within the Intelligence Community remain as to the likelihood that the PRC has used this information and, if it did, the significance of such use.

The Committee agrees with the Intelligence Community assessments that the technology transferred to the PRC during these two launch failure investigations may improve the PRC's space launch and ballistic missile programs. The Committee believes that the possibility that transferred technical information could improve PRC ICBMs merits the attention of U.S. policymakers.

Solid rocket motors

Another example of a safeguarded technology transfer that the Committee believes potentially benefitted PRC space launch and missile programs occurred in 1994 during technical meetings for the Martin Marietta Astrospace AsiaSat2 and the EchoStar satellite launch campaigns. The CGWIC had developed a solid fuel rocket, perigee kick motor to power satellites into higher orbit. Similar technology is used in ballistic missiles. The PRC had encountered significant problems with its kick motor; it had failed to operate properly in two of out five tests.

Martin Marietta engineers learned of the problem and, with the approval of U.S. Department of Defense monitors, offered to assist CGWIC in evaluating the motor. Martin Marietta propulsion engineers identified inconsistencies in the PRC data and pointed out a weakness in the PRC understanding of solid rockets motors, particularly the significance of pre-test performance predictions. They also recommended improved test procedures and configurations, including insulation specifications for the kick motors. The Committee is not aware of any PRC kick motor failures since these recommendations were made.

Discussions concerning engineering corrections to kick motors go beyond the "form, fit, and function" information needed to mate a satellite to its launch vehicle. The Committee believes that any technology transfer that improves PRC launch reliability is unacceptable even if such transfer is the result of a licensed, monitored activity.

b. Did such information enable the PRC to develop more effective ballistic missiles? If so, what were the resulting improvements?

Introduction

The Committee found no evidence that technology transfers from American companies have been incorporated into the PRC's deployed ICBM force, which was largely developed and fielded before the first U.S. satellites were approved for export to the PRC. However, American use of PRC space launch facilities provides funds to the PRC that can be used for military purposes and testing of space launch vehicles and capabilities. American use of PRC space launch vehicles has enhanced PRC space launch capabilities. Such capabilities have military applications, particularly in the communications and ballistic missile areas.

Committee findings and conclusions

Given the significant transfers of U.S. technology during the 1995 Apstar 2 and 1996 Intelsat 708 failure analyses and the ongoing development of the PRC ballistic missile modernization program, the integration of U.S. technology and know-how into the PRC's ICBM force may not be apparent for several years if at all.

Even then, indigenous improvements and improvements derived from non-U.S. foreign sources will make it difficult to detect and measure with precision to what extent technology transfers from American sources may have helped the PRC.

The Committee believes that extensive assistance from non-U.S. foreign sources probably is more important for the PRC ballistic missile development program than the technical knowledge gained during the American satellite launch campaigns.

Nevertheless, the Committee concludes that the technical information transferred during certain satellite launch campaigns enables the PRC to improve its present and future ICBM force that threatens the United States. Because such technical knowledge also is applicable to the development of other missile systems, the PRC could use the transferred information to improve its short range ballistic missiles (SRBMs) and intermediate range ballistic missiles (IRBMs) that threaten U.S. military forces and allies in Asia.

c. Was national security information available prior to export policy decisions that indicated that the exports could pose a threat to U.S. national security?

The Committee found that national security information that indicated that commercial satellite exports could pose a threat to U.S. national security was available to policy makers prior to export policy decisions.

Committee findings and conclusions

In September 1988, when the Reagan Administration authorized the launch of U.S. satellites on PRC boosters, some expressed concerns that the use of PRC boosters could hurt the U.S. launch industry, and, therefore, U.S. national security. Other risks associated with launching U.S. satellites on PRC boosters involved transfers of sensitive satellite technologies, including satellite and launch expertise. Experience under the policy includes examples of U.S. engineers and managers imparting detail of U.S. launch vehicle know-how and systems management processes to the PRC. In its assessment of the risks at the time, the CIA focused on the risk of transfer of sensitive satellite technologies and did not cite the risk of launch vehicle technology transfer, which was of concern to the White House Office of Science and Technology Policy. It was judged that these risks could be managed in the case of the PRC, although the U.S. policy that it was too risky to launch on Soviet boosters continued in effect.

In the early 1990s, concern grew in response to accumulating information about PRC military intelligence activities and proliferation of military technologies.

Following the April 1990 launch of the Hughes-built AsiaSat satellite, officials involved in licensing and monitoring the AsiaSat launch discussed the implications of the launch. They noted the risk that the PRC would acquire knowledge of U.S. engineering principles and problem solving. According to a State Department document, "Transfer of technical data is only one sensitive issue. Just as important is U.S. (HAC) procedural 'know-how' and systems testing/launch 'philosophy' learned over decades of trial and error."

In 1991, intelligence information regarding PRC proliferation led the Bush Administration to impose Category II Missile Technology Control Regime (MTCR) sanctions on PRC missile entities, including the CGWIC. With MTCR sanctions in effect, the Bush Administration did not approve any launches of U.S. manufactured satellites on PRC boosters.

In response to the sanctions, the PRC actively lobbied U.S. companies that they were losing valuable business opportunities because of sanctions and government restrictions. The PRC made it clear that access to a potentially vast PRC market in telecommunications services and equipment would be available to companies willing to cooperate.

During this same time period, the Bush Administration engaged in an intensive interagency review to determine which dual-use items could be transferred from the State Department's "Munitions List" to the Commerce Department's "Control List" without harming national security. As a result, the Bush Administration shifted to the Commerce Department jurisdiction over export of commercial satellites not containing items on a list of nine sensitive technologies.

In March 1992, the Bush Administration announced that it would lift its MTCR sanctions on the PRC. In September 1992, President Bush signed waivers for a number of U.S. satellites to be launched in the PRC.

When the Clinton Administration imposed MTCR Category II sanctions on the PRC in August 1993, Beijing made sure the U.S. satellite industry, which hoped to get in on the ground floor of the PRC economic opening, was told of the impact of sanctions. In 1991, the CIA had predicted that the PRC would follow this tack in such circumstances. Satellite industry leaders lobbied the Administration that sanctions should not affect exports of commercial satellites.

In 1993, the Commerce Department proposed a new legal interpretation that would exempt Commerce licensed satellites from MTCR sanctions. The State Department objected, citing its longstanding view that satellites, regardless of how licensed, should be denied for export to the PRC so long as MTCR sanctions were in place. The President decided in November 1993 that State could continue to prohibit export of satellites on its munitions list and that Commerce could license satellites under its jurisdiction while sanctions were in place.

Documents from the Intelligence Community, the Department of Defense and State, and the Arms Control and Disarmament Agency (ACDA), reveal that the White House had access to information indicating that the PRC was anxious to obtain U.S. technology. There were concerns in the U.S. Government regarding PRC violation of nonproliferation commitments and potential risks from continued U.S. space launches in the PRC. An August 1994 memorandum from the Department of Defense, for example, raised the following concern: "We do not want the USG [United States Government] to put itself in the position of supporting a proliferant's ballistic missile program" and noted that "only if China agrees to adhere to the MTCR can the USG be sure that money obtained from launch services is not diverted to missiles that are then ex-

ported." The memorandum expressed concern that PRC proliferation might lead to statutory sanctions. It also highlighted closer relationships between the PRC space launch program and military and proliferation entities. By 1994, intelligence reports indicated that PRC proliferation commitments were not reliable.

The PRC had sold and shipped missiles to Pakistan, which would lead to the imposition of Category I sanctions if the White House acknowledged the proliferation. According to testimony by Dr. Gordon Oehler, a former head of the CIA's Nonproliferation Center, in June 1998, the Intelligence Community was "virtually certain that this transfer of M–11 missiles [from China to Pakistan] had taken place." The Director of Central Intelligence has reported that PRC entities "continued to provide assistance to Pakistan's ballistic missile program during the first half of 1998."

In September 1993, when the President's Trade Promotion Coordinating Committee (TPCC) issued a report on export promotion, an intense private industry and congressional effort was underway to shift licensing of all remaining commercial communications satellites to the Commerce Department, despite the Bush Administration's examination of the issue just a year earlier. The September 1993 TPCC report stated that:

> The Administration will review immediately those COCOM International List (IL) items that currently are contained on the U.S. Munitions List [USML] (e.g., civil development aircraft, commercial satellites) in order to expedite moving those items to the Commerce Control List.

Similarly, the 1994 and 1995 TPCC reports on export promotion advocated the same kind of approach to the commercial satellite issue.

In 1995, the Office of Strategic Industries and Economic Security at the Department of Commerce urged that jurisdiction over the export of all commercial satellites should be shifted to the Commerce Department:

> [Such] items and technologies controlled under the USML [U.S. Munitions List] are excessively vulnerable to unilateral sanctions. The Department of State is bound by law to deny all products controlled on the USML, including satellites, to countries cited for violating the Missile Technology Control Regime. The results of such a prohibition were disastrous to U.S. satellite builders when sanctions were recently applied to the country [the PRC] offering the biggest emerging market in the world.

With no discussion of the risks of transferring sensitive military technology to the PRC, the background paper criticized the State Department's "lengthy and unpredictable application process," chafed at the length of the congressional notification process, noted that obtaining necessary validations from the U.S. Customs Service is "excessively time consuming," and concluded that:

> Transferring licensing jurisdiction for all commercial communications satellites and related technical data to the Commerce Department will better protect this industry from unilateral changes in trade policies resulting from

> geopolitical events. In addition, classifying commercial communications satellites as dual-use items should increase foreign customers' level of confidence concerning the U.S. export licensing system.

The Committee has substantial doubts that this point of view should be the basis for U.S. export control laws.

In 1995, the Clinton Administration began a review to determine if the commercial satellites remaining on the Munitions List could be moved to Commerce Department jurisdiction. A private defense firm, which participated in the review as a contractor, noted in April 1995, the proliferation risks associated with moving the export of all dual use satellite licenses to Commerce Department jurisdiction:

> the undeniable result of moving the subject USML [U.S. Munitions List] items and related technical data to the CCL [Commodity Control List] will be proliferation of the hardware and the basic technology. Ultimately development of foreign systems, not subject to USG controls, will be accelerated. This acceleration will be the result of the proliferation of the basic technology more than the export of end-item satellites with these characteristics. This proliferation will take the form of: (a) Technology transfer necessary to operate the satellites sold; (b) Offset requirements that demand offshore production of satellites components. Offset requirements normally include: (1) 30%–80% of the value of the contract be spent in the end user country and, (2) a major infusion of technology into the end user country. * * * [m]ovement of satellites with the subject features to the CCL will result in near total decontrol of the basic technology. Such decontrol will result in proliferation of satellites that U.S. forces will find difficult if not impossible to counter. This is especially true now, with limited military budgets and general reductions in forces. The capability to defeat satellites with the subject features will be many years into the future. Perhaps too late to win the next "Desert Storm."

That paper reviewed each of the USML satellite technologies that were still controlled by USML and concluded that no changes should be recommended and that in some cases, exporting the items would clearly put U.S. forces and operations at risk.

The Department of Commerce and satellite manufacturers favored shifting export control jurisdiction to Commerce. The Departments of State and Defense had sought to ensure that if the shift in jurisdiction took place, the Department of Commerce would use the same approach to monitoring that had been included in the department of state licenses. Senior Administration officials, however, concluded that American satellite makers were at a competitive disadvantage due to the State Department's onerous licensing procedures and that national security could still be protected even with the Commerce Department assuming full jurisdictional control over the export of all satellites.

According to press reports, the PRC has assisted North Korea on its satellite development program.

Despite this information, which has been disseminated to the Commerce Department, the Commerce Department had asserted that the 1996 jurisdiction shift covered any item to be exported as part of a satellite launch campaign, including satellite fuels and kick-motors, which are MTCR controlled items. The State Department was concerned that the new approach would increase the chance that the PRC would acquire U.S. kick motors. To highlight State Department concerns regarding the transfer of export control jurisdiction to Commerce, State noted that Commerce authorized export of a U.S. kick motor to the PRC without a satellite. The Clinton Administration interpreted the jurisdictional transfer to mean that the Commerce Department could license export of even non-embedded kick motors so long as the export was part of a launch campaign.

Normally, prior to waiving Tiananmen Square sanctions, the President was informed of relevant intelligence and other national security information. For an example of the type of information routinely flagged for the President's attention, an August 13, 1996 State Department internal memorandum identifying "Essential Factors" for the President's waiver of the SinoSat satellite program, which would bring U.S. satellite engineers in close contact with PRC entities, noted that one of the PRC entities involved reportedly was implicated in proliferation activities, which, if established as fact, could require sanctions. According to memoranda from ACDA to National Security Council (NSC) staff, waivers only made it more difficult to persuade the PRC to take U.S. proliferation demands seriously and to obtain interagency support to link the PRC's proliferation behavior to the licensing of launches and related technology.

Information was also made available to the White House regarding concerns with the Loral IRC failure analysis. The State Department forwarded its concern that U.S. export control laws had been violated to the Department of Justice. The Committee reviewed the February 1998 waiver of Tiananmen Square sanctions for the Loral Chinasat 8 satellite, at a time when Loral was under criminal investigation for the IRC's possible violations of export control laws. The documents supporting a waiver of Tiananmen sanctions noted that the Justice Department's Criminal Division expressed concerns over the potential "significant adverse impact" of such a waiver on a possible criminal prosecution.

d. If so, what steps were taken to disseminate such information to appropriate Executive branch officials and Congressional oversight committees?

The Committee found that finished intelligence products were made available to Executive branch officials and congressional committees.

Committee findings and conclusions

Finished intelligence products were disseminated within the Executive branch and to Congress regarding the PRC's efforts to acquire foreign technology, PRC proliferation of missile and other technology, and the links between the PRC's space launch industry and ballistic missile program. These reports, however, did not highlight the risks associated with specific exports. Nor, with the excep-

tion of assessments conducted by the National Air Intelligence Center regarding the Smart Dispenser, did they address possible improvements or enhancements to the PRC's space launch or missile capabilities in the course of PRC launch of U.S. satellites.

Decisions regarding trade with the PRC were made without consideration of a comprehensive Intelligence Community estimate of the risks and benefits of science and technology cooperation with the PRC, such as launches of U.S. satellites. In 1994, the National Intelligence Council process commenced production of a National Intelligence Estimate (NIE). The effort did not result in a finished product. The Committee has heard varying explanations of this outcome.

The CIA Inspector General is investigating the matter. The Committee looks forward to reviewing the Inspector General's report. In any event, the Committee believes such an NIE is needed and recommends that the NIE on such issues, which is in progress, be produced as soon as practicable.

An interagency intelligence group, the Standing Interagency Group for Foreign Satellites (SIG/FS), also evaluated export applications to assess technology transfer risks in the satellite area. SIG/FS evaluations were disseminated to the Department of Defense and to member intelligence entities, but not the White House. The SIG/FS was dissolved in September 1998.

Finally, as a member of the Missile Technology Export Committee (MTEC), an interagency panel that reviewed virtually all commercial satellite license applications forwarded to it by the Departments of State and Commerce, the CIA provided information on the end-users of satellites launched in the PRC to licensing officials.

e. and f. Are sufficient intelligence resources dedicated to obtaining information on PRC ballistic missile developments, including the potential impact of U.S. technology exports? What are the gaps in the Intelligence Community's ability to obtain such information?

Introduction

The Committee found that it was impossible to address the sufficiency of intelligence resources and the identification of gaps without reviewing the Intelligence Community's overall ability to collect and analyze intelligence on the PRC. Among other things, the Intelligence Community needs more experts in Chinese language, history, and culture.

Committee findings and conclusions

Significant gaps exist in the Intelligence Community's collection on issues of most interest to U.S. policy makers and military leaders. Deficiencies result in limited available intelligence on actual transfers of U.S. technology to the PRC.

The Committee found that, although the Intelligence Community has some robust capabilities, a number of factors limit the effectiveness of the Community's collection on the PRC. These limiting factors include resource constraints over tasking of current collection assets and a lack of language and technical skills. In addition, the Committee found problems with respect to intelligence dissemination and technological change. An increasing workload and de-

creasing number of qualified and skilled analysts limits the ability to focus on long-term analysis. Downsizing, the decision to replace civilian billets with military positions, and the subsequent failure of the military to fill them have eroded the analytic and linguist workforce.

The Committee urges the Assistant Director of Central Intelligence for Collection and the Assistant Director of Central Intelligence for Production and Analysis to correct the weaknesses noted above.

g. and h. What is the history of U.S. government security procedures for protecting national security when U.S. manufactured satellites are launched from the PRC and are current procedures adequate? Were these procedures followed during each PRC launch of a U.S. Satellite?

Introduction

The 1998 decision to permit the use of PRC space launch vehicles for U.S. commercials satellites represented a significant change in our relations with the PRC as well as an attempt to address the post-Challenger crisis in U.S. space launch capabilities. At the time, security precautions were taken to ensure that sensitive satellite and launch technology was not transferred to the PRC. Policy makers intended to expand bilateral commercial cooperation without harming the national security.

The Committee found significant weaknesses in the way this policy has been implemented. Monitoring procedures did not provide consistently high levels of launch campaign security. We may never be able fully to evaluate the launch campaign security monitoring program due to poor and incomplete recordkeeping.

Committee findings and conclusions

President Reagan's 1998 decision

President Reagan's decision to expand commercial ties with the PRC in an area involving complex and sophisticated satellite technologies required an an array of security and monitoring safeguards. The Reagan Administration conditioned the initial license applications for commercial satellites on agreements with the PRC to provide adequate technology transfer safeguards, establish the liability responsibilities of the PRC, and protect the U.S. commercial launch industry from unfair pricing or trade practices relating to launch competition. Agreements were concluded in each of these areas.

Extensive efforts were made in the first year of the monitoring program to ensure the physical security of the satellites in question. But the scale and complexity of the program exceeded the ability of the Defense Department to provide necessary resources. Structural weaknesses were evident almost immediately. These included personnel shortages, funding shortfalls, differences among Executive departments and agencies over management responsibilities, and lax procedures in transporting the satellite to the PRC and ensuring its security at the launch site. Other weaknesses included insufficient numbers of monitors to cover all conversations among engineers and over-reliance on corporate self-policing. In ad-

dition, corporate personnel involved in the transactions at issue here were and perhaps are insufficiently trained with respect to their security obligations. Finally, monitors believed they lacked authority to enforce export control rules.

Implementation in the Bush Administration

During the Bush Administration, implementing the security guidelines for the 1990 AsiaSat 1 launch campaign provided the impetus for a process of evaluation within the Defense Department. Defense Department officials voiced concerns about the adequacy of security and monitoring procedures for the AsiaSat 1 launch. Mid-level officials brought their concerns to the attention of senior officials about the absence of dedicated resources, the ad hoc approach to monitoring, and the small number of monitors overseeing the AsiaSat 1 launch. Such concerns were ignored.

Serious disagreements over the management of the monitoring program began to surface in early 1990. Funding was a continuing problem. In 1990, comprehensive proposals to address the issue were made and discarded. It is not clear from the documentation available to the Committee that a decision was ever made to dedicate the $729,800 necessary for five years' monitoring of 1.5 launches per year. Instead, the monitoring program seems to have been funded on an ad hoc basis for an indefinite period of time.

Following the successful launch of AsiaSat 1 on April 7, 1990, Air Force Systems Command (AFSC) wrote the Office of Secretary of Defense (OSD) that "fiscal constraints in funding and personnel have made it impossible for the Space Systems Division to provide support for follow-on campaigns." AFSC recommended that "OSD create a new dedicated organization to include the resources necessary to support upcoming international launch campaigns. The proposed organization should consist of 8 to 11 people. * * *" The recommendation was not supported.

DTSA recommendations offered two weeks later on May 17, 1990 were consistent with AFSC concerns. Both warned that the monitoring program, while initially effective, was on shaky ground given the lack of resources. And while the AsiaSat 1 launch had proceeded without significant security breaches, the post-launch evaluation session on May 31, 1990—including engineers from Hughes Aircraft Company, Hughes Communications Incorporated, and Defense Department officials—identified problems that needed to be addressed prior to the next launch campaign. The problems include uneven government supervision of technical interchange meetings, unmonitored transfers of know-how, and unactivated security equipment.

In 1991, Deputy Secretary of Defense Donald Atwood assigned management of the monitoring program to the Air Force. The Air Force was reluctant to take on these responsibilities, particularly because the Deputy Secretary's directive did not authorize additional personnel or funding to accommodate an increasing number of U.S. commercial launches scheduled in the PRC.

The Bush Administration began an interagency review of the entire subject in November 1990. In late 1992, the Administration transferred licensing jurisdiction for some commercial communication satellites from the State to the Commerce Department. Com-

merce was given the authority to license export of "form, fit and function" technical data necessary to mate the satellite with the launch vehicle. The State Department continued to license the export of any satellite containing one of nine technologies or performance characteristics identified as giving a satellite military capabilities. Implementation of the decision would be left to a new Administration.

Clinton Administration: Impact of licensing jurisdiction shift on the monitoring program

The Bush Administration's decision to shift responsibility to license exports of certain commercial satellites to the Commerce Department was not well understood at the time by the agencies involved. This decision left unclear what additional State Department licenses were required for discussions and activities relating to the integration of Commerce-licensed satellites with the launch vehicle. Further, not requiring monitors for satellites exported under Commerce Department licenses while relying on the company to pursue an additional license from the Commerce Department for technical discussions beyond basic "form, fit and function" instructions created confusion and inconsistency with respect to commercial satellite launches occurring in the PRC. According to Commerce Department records, Commerce officials disagreed that an additional license from the State Department was necessary for exports of certain commercial satellites under Commerce jurisdiction. Obligatory monitoring was a standard condition in State Department, not Commerce Department, export licenses. The Commerce Department argued that only "form, fit, and function" data were the subject of licensed technical interchange discussions. Therefore, in Commerce's view, no State Department license was needed. State disagreed but depended on notice from Commerce on the exporter to be able to intervene in a Commerce Department export license decision. Commerce did not believe such notice was required. Therefore, no DTSA monitors oversaw technical interchange meetings or preparations at launch for the Apstar 2 campaign in January 1995, the Apstar 1A campaign in July 1996, and Chinasat 7 campaign in August 1996.

Since no U.S. government personnel were present for the many conversations, meetings, and activities that preceded each launch, it is extremely unlikely that the U.S. government would be aware of any technology transfer, unless it was fortunate enough to detect evidence through other channels.

Notwithstanding its reduced role under the Department of Commerce licensing process, DTSA continued to believe that monitoring was required for all technical interchange meetings no matter the source of the export license and conveyed its views to Commerce Department officials.

Monitoring of Intelsat 708 and other launch campaigns

Defense Department officials encountered obstacles to ensuring launch campaign security. DTSA trip reports describing technical interchange meetings on the Intelsat 708 campaign in 1995–96 and operations at the Xichang Satellite Launch Center identified numerous security and license infractions prior to launch.

In January 1996, after the Intelsat 708 satellite was transported to the launch site, a Defense Department monitor reported a number of serious incidents putting into question the integrity of the monitoring program during transportation and unloading of the satellite. In addition, certain key facilities were not guarded; PRC engineers were not properly escorted at sensitive satellite control facilities; awareness of security issues by Loral personnel varied from "competent to total ignorance;" access to advanced equipment was mistakenly granted to PRC technicians, sensitive technology processes were conducted in the open; post-launch recovery of satellite debris parts was disorganized; classified materials were left unattended, security officials did not adequately determine the nationality of foreign technicians working in sensitive site areas; logs determining who entered and exited were incomplete; and Loral security personnel failed to design and implement a comprehensive plan for protecting technology.

Loral's manager of the Intelsat 708 launch campaign responded in writing to the Defense Department critical assessment, admitting that serious security breaches had occurred. However, he said that, with the Intelsat 708 satellite due to be launched on the Long March 3B rocket in just three weeks, little could be done at such a late date to compensate for all the deficiencies cited by U.S. Government monitors.

Following the Intelsat 708 explosion at launch on February 15, 1996, a memorandum updating senior Loral officials on debris collection efforts reported that "approximately two hundred Chinese soldiers were assigned to help carry bigger pieces to the collection center which was established at the crash site." Permitting such PRC workers to handle satellite debris provided the opportunity for the PRC to collect any sensitive material that might have survived the explosion.

A DTSA monitor report on the Echostar-1 campaign in 1995 also indicated that enforcing a proper security environment was given cursory treatment.

> The launch center as a whole is in terrible condition. * * * Electrical power to the entire site is irregular and unstable, in terms of being continuous and of specified voltage and frequency. Security of the entire building is poor with many unmonitored outside entrances. * * * The security of the perimeter around the entire complex was a joke.

In 1997, Defense Department documents confirm that the DTSA monitors struggled to keep pace with the number of technical interchange meetings. Lack of funding impeded travel by monitors to such meetings during the 1997 Chinastar-1 campaign. As a result, no monitors were present at the fourth technical interchange meeting for the Chinastar-1 campaign. The lack of trip reports, notes from technical interchange meetings, and poor record keeping prevent confident judgments about security during other launch campaigns.

Apstar 2 launch failure investigation

On December 7, 1998, the Department of Defense concluded that the January 1995 Apstar 2 launch failure investigation involved a serious breakdown in the licensing of technology exports. The report noted that a defense service was provided to the China Academy of Launch Vehicle Technology (CALT) that was "clearly beyond the scope of Commerce export control jurisdiction."

The analysis blamed Commerce Department officials for exceeding their legal authority:

> There was no reasonable basis to conclude that a launch vehicle failure investigation of the scope evidenced in the documents would not be subject to State Department export control jurisdiction.

Commerce Department officials approved Hughes' release of technical information to the CALT. According to the Defense Department report the fact that there were no limits or restrictions placed on the joint analysis led to the PRC deriving substantial technical benefits that it otherwise would have not been able to obtain. The Committee believes that Commerce should have referred the Hughes failure analysis report to the State and Defense Departments for review prior to the decision to approve release.

Security after President Clinton's decision to shift all commercial satellites from the State Department to the Commerce Department

In November 1996, President Clinton shifted jurisdiction over the export of all commercial satellites from the State Department to the Commerce Department. The policy debate surrounding this shift is described elsewhere in this report.

The Administration has argued that a balanced and fair dispute resolution process was adopted prior to the 1996 licensing shift. In December 1995, the President issued Executive Order 12891. The Executive Order reauthorized the Export Administration Act export controls at the Commerce Department (the Act had expired in August 1994) and revamped the interagency process for license approval. The Executive Order expanded the right of the Departments of State, Defense, and Energy, and ACDA to review all dual-use export license applications, including commercial satellites. Previously such agencies reviewed only some dual-use applications. The new process enables any agency disputing a Commerce license decision to block the license pending appeal. The appellate process involves four levels, ending with the President. No case was escalated. Most issues were resolved early in the process. Defense officials told the Committee that they believe the system creates disincentives to escalate export concerns.

Just a few weeks prior to the President's 1996 decision to shift commercial satellites, DTSA Director David Tarbell summarized the problem as follows:

> Commerce continues to seek an open-ended transfer of jurisdiction over some of the most advanced military technology regardless of the merits of the technical and security aspects. * * * Under the Commerce system, Com-

merce's role is to advocate the interests of exporters. The policy and institutional framework favors approval and imposes a significant burden of persuasion on DoD.

The 1996 Executive Order still did not restore State's ability to reject unilaterally export licenses for commercial satellites. State no longer had jurisdiction over any such satellites.

i. What are the national security advantages and disadvantages of launching U.S. manufactured satellites on PRC launch vehicles?

Introduction

National Security risks of exporting satellites for launch in the PRC are discussed in detail in previous sections of the report. The Committee also recognizes advantages accrue from this policy.

Committee findings and conclusions

The decision to launch U.S. commercial satellites on PRC space launch vehicles created a tension between U.S. national security interests and U.S. commercial interests. First, U.S. satellite companies and users of U.S. satellites fueled development of the PRC space launch industry. The fuel was demand for high quality, reliable launch services and money. Second, U.S. national security interests did not support improved PRC launch vehicle reliability and capability. Thus, this tension and conflict of interests has been problematic throughout the U.S.-PRC satellite launch relationship.

The United States dominates most aspects of the global market in commercial geosynchronous communications satellites. In 1997, the commercial satellite industry employed an estimated 101,000 people in the United States, of whom 57,800 were employed in satellite manufacturing, with the remainder involved in satellite services, ground equipment manufacturing, and other areas.

In 1997, U.S. satellite manufacturers relied on the PRC for six percent of their satellite launches. For the period 1988 to 1998, the PRC's share of the U.S. launch service market has averaged 10 percent but has declined steadily. (By comparison, 52 percent of U.S. satellites were launched on French Ariane rockets, and 33 percent aboard U.S. launch vehicles.)

The picture is somewhat more complicated, however, than the U.S. industry's statistically minimal reliance on PRC launch services might suggest. First, the predicted exponential growth in the global commercial space market—satellite manufacturing and services are expected to increase three-fold over the period 1997 to 2007—means the demand for launch services will remain high, with the result that even marginal launch service providers may be important to a particular company's plans. Second, the PRC commonly demands launch service contracts as a condition of providing telecommunications and other services to the PRC market. Therefore, the ability to launch in the PRC may be an important factor in a U.S. company's ability to compete in related PRC markets.

National security advantages include the fact that, to the extent PRC launch services contribute to a healthy and dominant U.S. satellite industry, they may also contribute to U.S. national security by assisting in the maintenance of a U.S. technological edge and continued U.S. dominance in the international commercial sat-

ellite and telecommunications market. The primary advantages of launching U.S. satellite in the PRC are the substantial commercial and economic benefits to certain corporations, their suppliers and subcontractors, and the communities where satellite and related equipment are produced. These benefits take the form of corporate income, salaries, high-technology/high-wage employment, and tax revenue.

The economic benefits to U.S. satellite makers must in turn be weighed against possible economic disadvantages. These include possible adverse effects on the U.S. space launch industry, the national security implications for the nation's space launch capability, and the potential long-term economic effects on the U.S. satellite industry and employment base. As the PRC seeks joint ventures to develop its own satellite industry, it will eventually compete with U.S. firms.

RECOMMENDATIONS

IMPROVE SATELLITE TECHNOLOGY SAFEGUARDS MONITORING PROGRAM

The Committee' investigation identified varied and disturbing shortcomings in the satellite launch monitoring program. Without significant reforms, this program will not be strengthened as demand for commercial satellite launches in the PRC and elsewhere increase, while the number of qualified personnel available to monitor launches is likely to decrease. To address this problem, the Committee makes the following recommendations.

1. The Secretary of Defense should authorize Defense Threat Reduction Agency (DTRA) monitors to suspend launch campaign activities at any time to address security concerns.

2. DTRA should:

(a) Establish appropriate professional and technical qualification requirements for satellite monitors.

(b) Allocate sufficient resources to prevent any shortfalls in the numbers of monitoring personnel.

(c) Pursuant to § 1514 of P.L. 105–736 (1998), DTRA should be advanced the estimated cost of monitoring and, promptly after conclusion of a launch campaign, fully reimbursed for monitoring costs.

(d) Create a formal technology training program that includes a structured framework for training and fielding monitors educated areas of export control law and regulations.

(e) Review and refine existing guidelines on the technologies and technical information suitable for discussion with foreign engineers, including technologies and technical information not to be shared under any circumstances with foreign personnel.

(f) Provide at least annual briefings to commercial satellite company personnel involved in space launch campaigns on the relevant export licensing standards, guidelines, and restrictions. Participation in these briefings should be a mandatory requirement for commercial satellite company personnel involved in space launch campaigns.

(g) Offer attractive financial and career incentives to individuals in the monitoring program.

(h) Establish a system whereby monitors file detailed reports for all activities they oversee for a launch campaign, and all records related to a particular satellite project should be systematically archived. Materials pertaining to these satellite launches shall be preserved in accordance with the Federal Records Act.

(i) Establish a counterintelligence office within DTRA as part of the monitoring program.

ANNUAL REPORT TO CONGRESS REGARDING IMPLEMENTATION OF SATELLITE TECHNOLOGY SAFEGUARDS

3. For the purpose of creating greater accountability within the satellite monitoring program, required by § 1514 of P.L. 105–736 (1998), DTRA should include in the annual report to Congress:

(a) summary account of all satellite launch campaigns and related technical discussions and activities;

(b) any license infractions or violations that may have occurred during those launch campaigns;

(c) resources and personnel dedicated to the satellite monitoring program; and

(d) the record of American satellite makers in cooperating with DTRA monitors and complying with export control laws and regulations.

TIME REQUIREMENTS AND TRANSPARENCY FOR STATE DEPARTMENT LICENSES

4. The Secretary of State should establish strict timetables for reviewing license requests involving the overseas launch of commercial satellites should be established. The State Department should complete its review of such license applications within 90 days. The State Department should advise American satellite producers the specific reasons for denying the license or conditioning it with certain provisos.

THE ROLE OF THE INTELLIGENCE COMMUNITY IN EXPORT CONTROL SHOULD BE ENHANCED

5. The Director of Central Intelligence or designee should be consulted at all stages within the satellite export licensing process with respect to end user and the national security impact of exports. The Committee recommends the creation of a technically proficient Intelligence Community group to provide the advice and disseminate it to all participating licensing agencies and relevant congressional committees.

ANNUAL INTELLIGENCE ASSESSMENT OF EFFORTS TO ACQUIRE SENSITIVE U.S. TECHNOLOGY AND TECHNICAL INFORMATION

6. The Intelligence Community should complete an annual analysis of export license applications to determine which technologies are of interest to different nations, and what their pursuit of specific technologies indicates. This assessment should be provided both to the Executive branch officials involved in export policymaking and Congress.

LICENSE APPROVALS OR WAIVERS FOR ENTITIES SUBJECT TO CRIMINAL INVESTIGATION

7. The Committee recommends that the Administration promptly notify appropriate committees of Congress when satellite exporters are under investigation for alleged violations in connection with satellite exports, and provide a statement of the security justification when a waiver or license is provided to such exporter. In addition, export license applicants should be required to indicate whether they are under investigation as part of the application process.

MISSILE TECHNOLOGY CONTROL REGIME (MTCR)

8. The Administration should use all available means to obtain PRC adherence to, and compliance with, the Missile Technology Control Regime (MTCR) and Annex. In light of the PRC's record as a persistent proliferator, the PRC should not be permitted to join the MTCR without having demonstrated a sustained and verified commitment to non-proliferation of missiles and missile technology and has an effective export control system implementing the MTCR guidelines and Annex.

SPACE LAUNCH CAPACITY

9. The Committee recommends that Congress and the Administration work together to stimulate and encourage expansion of U.S. commercial launch capability. To this end, the Committee recommends steps to remove government barriers to long-term competitiveness in the space launch industry.

10. The Committee believes that its findings justify a reappraisal of the policy permitting the export of U.S. commercial satellites to the PRC for launch. The Committee recommends that the appropriate committees of Congress review the advantages and disadvantages of phasing out the practice of launching of U.S. satellites in the PRC. Such review should consider the findings of this Committee, the Administration views, the U.S. satellite industry, U.S. space launch industry, the U.S. telecommunications industry, and other interested parties. The Committee recommends that, if a phase-out policy is adopted, such policy explicitly should authorize the export to the PRC for launch of all satellites previously licensed and should be designed to minimize the risk of additional technology transfer to the PRC during these remaining launches.

(2) Report on the PRC Efforts To Influence U.S. Policy

2. Is there Intelligence Information [1] that substantiates the allegation that the People's Republic of China (PRC) government undertook a covert program to influence the political process in the United States through political donations, and other means, during the 1996 election cycle?

Yes. As part of its investigation into covert activities undertaken by the People's Republic of China (PRC) to influence the 1996 elec-

[1] For purposes of this report, "Intelligence Information" includes foreign intelligence (FI) and foreign counterintelligence (FCI) as defined in Section 3 of the National Security Act and in Executive Order 12333. It does not include information obtained by law enforcement investigations

tion cycle, the Committee conducted several hearings, interviewed many witnesses and examined thousands of documents and intelligence reports.

Historically, the PRC government has focused entirely on influencing the U.S. President and other Executive branch officials. However, after the Taiwanese President, Lee Tung-hui, was granted a visa to the United States in 1995, PRC officials decided that it was necessary to reassess their relationship with Congress. In response to President Lee's visit, the PRC conceived of a plan[2] to influence the U.S. political process favorably toward that country. The plan was an official PRC plan, and funds were made available for its implementation. The existence of this plan is substantiated by the body of evidence reviewed by the Committee, including intelligence reports.

While the primary focus of the PRC plan was the U.S. Congress, the Committee discovered no direct evidence or information of an actual attempt to influence a particular member of Congress. However, the PRC plan to influence the U.S. political process applied to various political office holders or candidates at the local, state and federal level.

There is Intelligence Information indicating PRC officials provided funds to U.S. political campaigns. However, the Intelligence Information is inconclusive as to whether the contributions were part of the overall China Plan.

During a criminal investigation into violations of the Federal Election Campaign Act (FECA), Johnny Chung, a U.S. citizen and a subject of that investigation, stated that in August 1996 he had been given $300,000 by a senior PRC official to assist in the election of President Clinton. While this statement is contrary to his previous statements, the FBI can trace only about $20,000 of the $300,000 to the Democratic National Committee, via a contribution by Chung. Most of the remaining funds went for his personal use, including mortgage payments. There is also reporting regarding contributions from other sources made to a Republican candidate for state office and a Republican state office holder. There is no Intelligence Information indicating that contributions had any influence on U.S. policy or the U.S. political process or that any recipients knew the contributions were from a foreign source.

The intermediary between Johnny Chung and the senior PRC official was Ms. Liu Chao-ying, daughter of General Liu Hua-qing, formerly the highest ranking military officer in the PRC. Law enforcement and intelligence agencies did not coordinate meaningfully concerning Ms. Liu's activities during this period. The totality of the information available at the time could have caused the agencies to alert the White House, for example, in July 1996, when

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(unless it was also provided as FI or FCI to law enforcement agencies by intelligence agencies). However, it does include information obtained in a law enforcement investigation which was in turn provided by law enforcement agencies to intelligence agencies as FI or FCI. It does not include information collected by intelligence agencies pursuant to the authority of Section 105A of the National Securities Act, unless such information also is FI or FCI. It does not include information collected by other congressional committees investigating PRC political influence as such, but it could include this information if it were also FI or FCI. Finally, it does not, insofar as known, include information protected by Rule 6E, Federal Rules of Criminal Procedure (FRCP).

[2] The term "China Plan" was used in discussions between Congress and the Executive branch to refer to the collective body of information describing these efforts by the PRC.

Ms. Liu attended a fund raiser for President Clinton in California and participated in a photo opportunity with the President. This trip took place at the invitation of Johnny Chung, who had been introduced to Ms. Liu during a visit to Hong Kong in early 1996.

All relevant information collected during the Committee's investigation, including some suspicious banking relationships, has been turned over to appropriate law enforcement and counterintelligence authorities.

a. When was any such information obtained, and what steps were taken to disseminate it to appropriate Executive branch officials and Congressional oversight Committees?

Information on the PRC plan was collected by, and was in the possession of, many law enforcement and intelligence agencies. While agencies were collecting information concerning activities in furtherance of the plan, there was inadequate communication and coordination among the agencies and sometimes within an individual agency concerning the PRC plan. There seems to have been two reasons for this: lack of analytic resources within the Intelligence Community—and—the Community's failure to form a "big picture" of the PRC plan early enough to assess its risks to U.S. national security and to target collection efforts.

b. Does information exist that indicates the PRC covert effort is continuing today?

The Intelligence Community continues to collect and analyze information in order to detect PRC covert efforts to influence the U.S. political process.

c. Does a cover effort to influence the U.S. political process represent a threat to U.S. national security?

A covert effort to influence the U.S. political process does represent a threat to U.S. national security. As Director Tenet stated in the Committee's June 4, 1998 hearing, "* * * any time someone tries to influence our political process, we should be deeply concerned about it." Any time a foreign government or group attempts to covertly influence American policy, or through clandestine means tries to affect U.S. political campaigns on the federal, state, or local level, our sovereignty and national security are threatened. The Committee believes that this is a serious threat to our national security.

d. In what ways does a covert effort to influence the U.S. political process differ from other types of international influences on elections?

A covert effort to influence the U.S. political process would involve actions or activities by a foreign government or group to influence American political campaigns or policymaking where it is intended that the role of the foreign government will not be apparent or acknowledged publicly. An overt effort to influence the U.S. political process would involve actions or activities by a foreign government or group to influence American political campaigns or policymaking where the role of the foreign government is apparent and acknowledged publicly.

Covert activities to influence U.S. elections and policymaking may include foreign governments or groups providing direct or indirect funding to candidates and political parties; foreign governments or groups funding lobbying of government officials and polit-

ical candidates by persons whose relationship with a foreign entity is not disclosed; foreign governments or groups soliciting American citizens or businesses to fund candidates supportive of the foreign entity with the understanding that this solicitation would not be acknowledged; the unacknowledged use by a foreign government or group of the American news media to spread propaganda reflecting that entity's interests; the unacknowledged funding by a foreign government or group of educational activities concerning that entity or travel to that nation; and the unacknowledged formation by a foreign government or group of associations and organizations that are supportive of the foreign entity's interests.

Direct or indirect funding by foreign governments or entities of American election campaigns are a grave concern to the United States. However the issue of whether all foreign contributions to U.S. election campaigns are indeed illegal remains in dispute. While the Federal Election Campaign Act (FECA) forbids foreign citizens from providing direct contributions or "hard money" to a local, state, or federal election campaign, the law is less clear about the illegality of foreigners providing so-called "soft money" contributions to political parties which are not spent on campaigns.

Specifically, section 441e of the FECA provides:

> It shall be unlawful for a foreign national directly or through any other person to make any contribution of money or other thing of value, or to promise expressly or impliedly to make any such contribution, in connection with an election to any political office or in connection with any primary election, convention, or caucus held to select candidates for any political office; or for any person to solicit, accept, or receive any such contribution from a foreign nation. (2 U.S.C. 441e(a))

The language in this section specifies that funds provided by foreign nationals directly in connection with any election are illegal. However, this section does not address soft money raised by political parties and other groups. Much of the soft money raised by political parties is not used in conjunction with any specific election campaign or candidate. Soft money may also be used for issue advertisements that do not expressly advocate election or defeat of a candidate, and for voter drives.

In an October 9, 1998 opinion during pretrial motions in the case of the United States vs. YAH Lin "Charlie" Trie, U.S. District Court Judge Paul L. Friedman ruled that citizens of foreign nations are only prohibited from making "hard-money" contributions to candidates. Judge Friedman wrote that, although the Department of Justice prosecutors contend that the prohibition on contributions by foreign nationals "applies to soft money donations as well as to hard money contributions. * * * The court disagrees." According to this opinion in the Trie case, a "contribution" as defined in 2 U.S.C. §431(8)(a) refers only to money or anything of value provided for the purpose of influencing Federal campaigns. Under this interpretation of the statute, money provided by a foreign national to a political party which is not specifically for the purpose of influencing a Federal campaign is not a "contribution." As a result, according to Judge Friedman's opinion, "the statute on

its face therefore does not proscribe soft money donations by foreign nationals or by anyone else."

Other than direct or indirect funding of an American election campaign by a foreign government or group, the tactics that could be employed in covert and overt attempts to influence elections and policymaking are quite similar. Many foreign governments and groups attempt to overtly influence U.S. elections and policymaking through lobbying; utilizing their relationships with U.S. persons, businesses, organizations, and associations to encourage support for their interests; utilizing their relationships with U.S. persons, businesses, organizations, and association to encourage support for the candidates and policymakers who support their interests; educational efforts aimed at candidates and policymakers; sponsored travel to a foreign country; use of the American news media to publicize their views; and the formation of associations and organizations that are supportive of their interests. Individuals representing foreign political parties have also served as consultants to U.S. political campaigns. In all of these actions and activities, the involvement of a foreign government or group is apparent and is acknowledged publicly.

e. Are sufficient intelligence resources dedicated to obtaining information on PRC, or other foreign, covert influences on the U.S. political process?

f. What are the gaps in the Intelligence Community's ability to obtain such information?

Sections e and f of the first part of this report address the Committee's findings on the above issues.

Conclusions and Recommendations

Based on this investigation, the Committee has reached the following conclusions and recommendations:

- Although analysts have constructed fairly coherent pictures of PRC attempts to influence the American political process, these assessments were undertaken primarily because Congress demanded that the IC produce the information in their possession on this issue. The Committee believes that without congressional pressure this kind of collection and analysis would not have taken place. Accordingly, the Committee recommends a top to bottom review of the intelligence cycle (tasking, collection, processing, analysis, and dissemination) with regard to foreign political influence.
- The Committee has identified, and CIA analysts have acknowledged, a lack of information in this area. The Committee believes that this dearth reflects a serious deficiency in collection efforts. Furthermore, the lateness of the CIA's recognition of the scope of PRC efforts to influence our foreign policy and our elections as a significant area for collection is disturbing. The Committee recommends an enhanced focus on this area and that law enforcement and intelligence agencies dedicate sufficient resources to collection and analysis of foreign efforts to influence our policies and elections.
- The IC collects an extremely large volume of material. One of the IC's most difficult tasks is prioritizing this information for timely analysis and dissemination. While most of the information regarding the PRC Plan was disseminated in a timely manner,

some very important actionable information was not. Prompt dissemination of this information would have been of great utility to the various investigations into these activities. The Committee believes that the delay in dissemination of this information is systemic of the IC's growing difficulty with processing the vast amount of information it collects. The Committee recommends that the Intelligence Community review priorities for processing collected intelligence, determine whether additional analytical tools are necessary to expedite processing, and evaluate whether there are sufficient resources allocated to review and analyze data collected and processed.

- The Committee found that there were instances where FBI law enforcement information referring to PRC plans to influence the U.S. political process which also had foreign intelligence and counter-intelligence value was not shared at all or was not shared in a timely manner with CIA analysts. Again, the Committee believes that the CIA and the FBI need to work out better ways to exchange information.
- The FBI was frequently unable to retrieve Intelligence Information relevant to this investigation. The FBI often did not know what it had on file about a particular subject unless and after they made hand searches of records or asked Field Offices to similarly search their records. The Bureau's inability to centrally locate, retrieve, process, evaluate, analyze and disseminate foreign intelligence and counter-intelligence information demonstrates a serious deficiency within the FBI's National Security Division. The Committee recommends that the FBI present a comprehensive plan which will address this serious situation, but in a way that observes key distinctions between the two basic missions of the FBI, intelligence collection and law enforcement. The Committee understands fully that correcting this deficiency will require a long term investment, and the Committee believes that Congress is prepared to support these efforts.
- Although a recent judicial opinion in the Charlie Trie case questioned the applicability of FECA to soft money contributions by foreign nationals, the Committee believes that Congress intended FECA to prohibit all contributions by foreign nationals, whether they are hard or soft money. Therefore, the Committee believes Congress should amend the Federal Election Campaign Act to clarify its intent.

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