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NONPROLIFERATION

Improvements Needed for Controls on Exports of Cruise Missile and Unmanned Aerial Vehicle Technology

Statement of Joseph A. Christoff, Director
International Affairs and Trade

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GAO-04-493T

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Highlights

Highlights of GAO-04-493T, testimony before the Subcommittee on National Security, Emerging Threats, and International Relations, Committee on Government Reform, House of Representatives

Why GAO Did This Study

Cruise missiles and unmanned aerial vehicles (UAV) pose a growing threat to U.S. national security interests as accurate, inexpensive delivery systems for conventional, chemical, and biological weapons. GAO assessed (1) the tools the U.S. and foreign governments use to address proliferation risks posed by the sale of these items and (2) efforts to verify the end use of exported cruise missiles, UAVs, and related technology.

What GAO Recommends

The Secretary of Commerce should assess and report to Congress on the adequacy of an export regulation provision to address missile proliferation by nonstate actors and on ways the provision might be modified to address a gap in U.S. export control authority.

The Secretaries of State, Commerce, and Defense each should complete a comprehensive assessment of cruise missile, UAV, and related dual-use transfers to determine if U.S. exporters and foreign end users comply with conditions related to the transfers.

Commerce and Defense partially agreed with the recommendations. State disagreed to complete an assessment, but said it would pay special attention to the need for more checks on cruise missile and UAV transfers.

www.gao.gov/cgi-bin/getrpt?GAO-04-493T.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Joseph A. Christoff at (202) 512-8979 or christoffj@gao.gov.

What GAO Found

The growing threat to U.S. national security of cruise missile and UAV proliferation is challenging the tools the United States has traditionally used. Multilateral export control regimes have expanded their lists of controlled technologies that include cruise missile and UAV items, but key countries of concern are not members. U.S. export control authorities find it increasingly difficult to limit or track unlisted dual-use items that can be acquired without an export license. Moreover, a gap in U.S. export control authority enables American companies to export certain dual-use items to recipients that are not associated with missile projects or countries listed in the regulations, even if the exporter knows the items might be used to develop cruise missiles or UAVs. American companies have in fact legally exported dual-use items with no U.S. government review to a New Zealand resident who bought the items to build a cruise missile.

The U.S. government seldom uses its end-use monitoring programs to verify compliance with conditions placed on the use of cruise missile, UAV, or related technology exports. For example, State officials do not monitor exports to verify compliance with license conditions on missiles or other items, despite legal and regulatory requirements to do so. Defense has not used its end-use monitoring program initiated in 2002 to check the compliance of users of more than 500 cruise missiles exported between fiscal years 1998 and 2002. Commerce conducted visits to assess the end use of items for about 1 percent of the 2,490 missile-related licenses we reviewed. Thus, the U.S. government cannot be confident that recipients are effectively safeguarding equipment in ways that protect U.S. national security and nonproliferation interests.

A Chinese SILKWORM Cruise Missile in Iraq

Source: Department of Defense.

Mr. Chairman and Members of the Committee,

I am pleased to be here today to discuss GAO's report[1] on U.S. efforts to limit the proliferation of cruise missiles and unmanned aerial vehicles (UAV). These efforts are complicated by the widespread availability of these items among countries of concern.[2] The U.S. government faces trade-offs when making decisions about transfers of cruise missiles, UAVs, or related technology. The United States wants to prevent the proliferation of these weapons systems to countries of concern and terrorists. At the same time, the U.S. government has an interest in encouraging transfers of cruise missiles and UAVs to U.S. allies to support regional security and bilateral relations. The U.S. government also wants to use these sales to help maintain the health of the U.S. defense industrial base.

You asked us to assess U.S. and international efforts to limit the proliferation of cruise missiles, unmanned aerial vehicles, and related technology. Specifically, we assessed (1) the nature and extent of cruise missile and UAV proliferation; (2) the nonproliferation tools that the United States uses to address the proliferation risks posed by the sale of these items; and (3) U.S. and other governments' efforts to verify the end use of exported cruise missiles, UAVs, and related technology.

To address these issues, we reviewed analyses prepared by the Departments of State, Commerce, Defense, and Homeland Security, and the U.S. intelligence community, as well as studies prepared by nonproliferation experts. We also reviewed multilateral export control regime[3] documentation; met with representatives of the Missile Technology Control Regime (MTCR) in Paris, France; and interviewed government officials in France, Italy, and the United Kingdom. Furthermore, we analyzed export licensing information from the

[1]U.S. General Accounting Office, *Nonproliferation: Improvements Needed to Better Control Technology Exports for Cruise Missiles and Unmanned Aerial Vehicles*, GAO-04-175 (Washington, D.C.: Jan. 23, 2004).

[2]Countries of missile proliferation concern listed in the Export Administration Regulations are Bahrain, China, Egypt, India, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Macau, North Korea, Oman, Pakistan, Qatar, Saudi Arabia, Syria, United Arab Emirates, and Yemen.

[3]Multilateral export control regimes are voluntary, nonbinding arrangements among likeminded supplier countries that aim to restrict trade in sensitive technologies to peaceful purposes. Regime members agree to restrict such trade through their national laws and regulations, which set up systems to license the exports of sensitive items.

Departments of State, Commerce, and Defense on exports of cruise missiles, UAVs, and related dual-use technology that have both military and civilian applications.

Summary

In summary, we found that

- Cruise missiles and UAVs pose a growing threat to U.S. national security interests as accurate and inexpensive delivery systems for conventional, chemical, and biological weapons. Conventional anti-ship cruise missiles pose an immediate threat to U.S. naval vessels because of the widespread availability of these weapons worldwide. At least 70 nations currently possess some type of anti-ship missiles armed with conventional, high explosive warheads, and at least 32 nations are developing or manufacturing more than 250 models of UAVs. Land-attack cruise missiles pose a future threat to the U.S. homeland because of the anticipated growth in the availability of these more accurate, longer-range systems. The widespread availability of commercial items, such as global positioning systems and lightweight engines, has made it easier for countries and terrorists to acquire or build at least rudimentary cruise missile or UAV systems.

- The United States primarily uses multilateral export control regimes and national export controls among other tools to address the threat associated with cruise missile and UAV proliferation. Between 1997 and 2002, multilateral export control regimes have added cruise missile and UAV-related items to their control lists, thereby committing regime members to provide greater scrutiny to these items before licensing them for export. However, nonmembers such as China and Israel continue to acquire, develop, and export cruise missile or UAV technology. This growing capability of nonmember supplier countries to develop technologies used for weapons of mass destruction and trade them with other countries of proliferation concern undermines the regimes' ability to impede proliferation. In addition, the United States faces limitations in applying national export controls. First, the U.S. government finds it difficult to identify and track widely available dual-use items that are not on control lists but that can be used for cruise missile and UAV proliferation purposes. Second, a gap in U.S. catch-all control regulations[4] enabled American companies to legally

[4]Catch-all controls are controls that authorize a government to require an export license for items that are not on control lists but that are known or suspected of being intended for use in a missile or weapons of mass destruction (WMD) program.

export dual-use items to a New Zealand resident who bought the items to show how a terrorist could legally build a cruise missile.

- The U.S. government uses post-shipment verification (PSV) visits as a key tool available to confirm that the recipients of sensitive U.S. technologies are using them in accordance with license conditions. However, of 786 licenses for cruise missile and UAV technology that the Department of State issued between fiscal years 1998 and 2002, it conducted verification visits on only 4 licenses. The Department of Defense conducted no monitoring over more than 500 cruise missiles and related items that it transferred to other countries between fiscal years 1998 and 2002. The Department of Commerce conducted verification visits on 1 percent of nearly 2,500 missile-related licenses issued between fiscal years 1998 to 2002.

We are recommending that the Secretary of Commerce assess and report to Congress on the adequacy of the export control regulations' catch-all provision to address missile proliferation by nonstate actors and on ways the provision might be modified. We are also recommending that the Secretaries of State, Commerce, and Defense each complete a comprehensive assessment of the nature and extent of compliance with license conditions on cruise missiles, UAVs, and related dual-use technology. Commerce and Defense partially agreed with the recommendations. State disagreed to complete an assessment, but said it would pay special attention to the need for more checks on cruise missile and UAV transfers.

Background

Distinctions between cruise missiles and UAVs are becoming blurred as the militaries of many nations, in particular the United States, attach missiles to traditional reconnaissance UAVs and develop UAVs dedicated to combat missions. A UAV, a pilotless vehicle that operates like an airplane, can be used for a variety of military and commercial purposes. UAVs are available in a variety of sizes and shapes, propeller-driven or jet propelled, and can be straight-wing aircraft or have tilt-rotors like helicopters. They can be as small as a model aircraft or as large as a U-2 manned reconnaissance aircraft. A cruise missile is an unmanned aerial vehicle designed for one-time use, which travels through the air like an airplane before delivering its payload. A cruise missile consists of four major components: a propulsion system, a guidance and control system, an airframe, and a payload. The technology for the engine, the autopilot, and the airframe could be similar for both cruise missiles and UAVs, according to a 2000 U.S. government study of cruise missiles.

Cruise missiles provide a number of military capabilities. For example, they present significant challenges for air and missile defenses. Cruise missiles can fly at low altitudes to stay below radar and, in some cases, hide behind terrain features. Newer missiles are incorporating stealth features to make them less visible to radars and infrared detectors. Furthermore, land-attack cruise missiles may fly circuitous routes to get to their targets, thereby avoiding radar and air defense installations.

U.S. policy on the proliferation of cruise missiles and UAVs is expressed in U.S. commitments to the MTCR and Wassenaar Arrangement. These multilateral export control regimes are voluntary, nonbinding arrangements among like-minded supplier countries that aim to restrict trade in sensitive technologies. Regime members agree to restrict such trade through their national laws and regulations, which set up systems to license the exports of sensitive items. The four principal regimes are the MTCR; the Wassenaar Arrangement, which focuses on trade in conventional weapons and related items with both civilian and military (dual-use) applications; the Australia Group, which focuses on chemical and biological technologies; and the Nuclear Suppliers Group, which focuses on nuclear technologies. The United States is a member of all four regimes. Regime members conduct a number of activities in support of the regimes, including (1) sharing information about each others' export licensing decisions, including certain export denials and, in some cases, approvals and (2) adopting common export control practices and control lists of sensitive equipment and technology into national laws or regulations.

Exports of commercially supplied American-made cruise missiles, military UAVs, and related technology are transferred pursuant to the Arms Export Control Act, as amended, and the International Trafficking in Arms Regulations, implemented by State. Government-to-government transfers are made pursuant to the Foreign Assistance Act of 1961, as amended, and are subject to DOD guidance. Exports of dual-use technologies related to cruise missiles and UAVs[5] are transferred pursuant to the Export

[5]Related items include technical data, subcomponents, and spare parts.

Administration Act of 1979, as amended,[6] and the Export Administration Regulations,[7] implemented by Commerce.

The Arms Export Control Act, as amended in 1996, requires the President to establish a program for end-use monitoring of defense articles and services sold or exported under the provisions of the act and the Foreign Assistance Act.[8] This requirement states that, to the extent practicable, end-use monitoring programs should provide reasonable assurance that recipients comply with the requirements imposed by the U.S. government on the use, transfer, and security of defense articles and services. In addition, monitoring programs, to the extent practicable, are to provide assurances that defense articles and services are used for the purposes for which they are provided. The Export Administration Act, as amended, provides the Department of Commerce with the authority to enforce dual-use controls. Under the act, Commerce is authorized to conduct PSV visits outside the United States of dual-use exports.[9]

Proliferation of Cruise Missiles and UAVs Poses a Growing Threat to U.S. National Security Interests

Although cruise missiles and UAVs provide important capabilities for the United States and its friends and allies, in the hands of U.S. adversaries they pose substantial threats to U.S. interests. First, anti-ship cruise missiles threaten U.S. naval forces deployed globally. We reported in 2000 that the next generation of anti-ship cruise missiles—most of which are now expected to be fielded by 2007—will be equipped with advanced target seekers and stealthy design.[10] These features will make them more difficult to detect and defeat. At least 70 nations possess some type of cruise missile, mostly short-range, anti-ship missiles armed with conventional, high-explosive warheads, according to a U.S. government study. Countries that export cruise missiles currently include China, France, Germany, Israel, Italy, Norway, Russia, Sweden, United Kingdom, and the United States. China and Russia have sold cruise missiles to Iran,

[6]50 U.S.C. app. §§ 2401 and following. Executive Order 13222, 66 Fed. Reg. 44025 and subsequent presidential notices continue the export control regime established under the act and the Export Administration Regulations.

[7]15 C.F.R. §§ 730-774.

[8]22 U.S.C. § 2785.

[9]50 U.S.C. app § 2411(a)(1).

[10]U.S. General Accounting Office, *Defense Acquisitions: Comprehensive Strategy Needed to Improve Ship Cruise Missile Defense*, GAO-NSIAD-00-149 (Washington, D.C.: July 2000).

Iraq, Libya, North Korea, and Syria. Nations that manufacture but do not yet export cruise missiles currently include Brazil, India, Iran, Iraq, North Korea, South Africa, and Taiwan. None of these nonexporting manufacturing countries is a member of the Wassenaar Arrangement, and only Brazil and South Africa are in the MTCR.

Second, land-attack cruise missiles have a potential in the long-term to threaten the continental United States and U.S. forces deployed overseas. Various government and academic studies have raised concerns that the wide availability of commercial items, such as global positioning system receivers and lightweight engines, allows both countries and nonstate actors to enhance the accuracy of their systems, upgrade to greater range or payload capabilities, and convert certain anti-ship cruise missiles into land-attack cruise missiles. Although not all cruise missiles can be modified into land-attack cruise missiles because of technical barriers, specific cruise missiles can and have been. For example, a 1999 study outlined how the Chinese Silkworm anti-ship cruise missile had been converted into a land-attack cruise missile.[11] Furthermore, the Iraq Survey Group reported in October 2003 that it had discovered 10 Silkworm anti-ship cruise missiles modified to become land-attack cruise missiles and that Iraq had fired 2 of these missiles at Kuwait. According to an unclassified national intelligence estimate,[12] several countries are technically capable of developing a missile launch mechanism to station on forward-based ships or other platforms to launch land-attack cruise missiles against the United States.

Finally, UAVs represent an inexpensive means of launching chemical and biological attacks against the United States and allied forces and territory. For example, the U.S. government reported its concern over this threat in various meetings and studies. The Acting Deputy Assistant Secretary of State for Nonproliferation testified in June 2002 that UAVs are potential delivery systems for WMD, and are ideally suited for the delivery of chemical and biological weapons given their ability to disseminate aerosols in appropriate locations at appropriate altitudes. He added that,

[11] *Feasibility of Third World Advanced Ballistic and Cruise Missile Threat, Volume 2: Emerging Cruise Missile Threat*, Systems Assessment Group; National Defense Industrial Association Strike, Land-Attack and Air Defense Committee (Washington, D.C.: August 1999).

[12] *Foreign Missile Developments and the Ballistic Missile Threat Through 2015, Unclassified Summary of a National Intelligence Estimate*, National Intelligence Council (Washington, D.C.: December 2001).

although the primary concern has been that nation-states would use UAVs to launch WMD attacks, there is potential for terrorist groups to produce or acquire small UAVs and use them for chemical or biological weapons delivery.

Key Nonproliferation Tools Have Limitations Addressing Cruise Missile and UAV Proliferation

The U.S. government generally uses two key nonproliferation tools—-multilateral export control regimes and national export controls—to address cruise missile and UAV proliferation, but both tools have limitations. The United States and other governments have traditionally used multilateral export control regimes, principally the MTCR, to address missile proliferation. However, despite successes in strengthening controls, the growing capability of countries of concern to develop and trade technologies used for WMD limits the regime's ability to impede proliferation. For example, between 1997 and 2002, the United States and other governments successfully revised the MTCR's control lists of sensitive missile-related equipment and technology to include six of eight U.S.-proposed items related to cruise missile and UAV technology. Adding items to the control lists commits regime members to provide greater scrutiny when deciding whether to license the items for export. Despite the efforts of these regimes, nonmembers such as China and Israel continue to acquire, develop, and export cruise missile or UAV technology. The growing capability of nonmember supplier countries to develop technologies that could be used for WMD and trade them with other countries of proliferation concern undermines the regimes' ability to prevent proliferation.

In October 2002, we reported on other limitations that impede the ability of the multilateral export control regimes, including the MTCR and Wassenaar Arrangement, to achieve their nonproliferation goals. We found that MTCR members may not share complete and timely information, such as members' denied export licenses, in part because the regime lacks an electronic data system to send and retrieve such information. The Wassenaar Arrangement members share export license approval information but collect and aggregate it to a degree that it cannot be used constructively. Both MTCR and the Wassenaar Arrangement use a consensus-based process that makes decision-making difficult. The regimes also lack a means to enforce compliance with members' political commitments to regime principles. We recommended that the Secretary of State establish a strategy to work with other regime members to enhance the effectiveness of the regimes by implementing a number of steps, including (1) adopting an automated information-sharing system in MTCR to facilitate more timely information exchanges, (2) sharing greater and

more detailed information on approved exports of sensitive transfers to nonmember countries, (3) assessing alternative processes for reaching decisions, and (4) evaluating means for encouraging greater adherence to regime commitments.[13] However, State has not been responsive in implementing the recommendation to establish a strategy to enhance the effectiveness of the regimes. State officials said that the recommendation is under consideration in a review by the National Security Council that has been ongoing for over a year.

The U.S. government uses its national export control authorities to address missile proliferation but finds it difficult to identify and track commercially available items not covered by control lists. For example, Bureau of Immigration and Customs Enforcement agents upon inspecting an item to be exported might identify that the item is a circuit board, but not that it is part of a guidance system and that the guidance system is intended for a cruise missile. Moreover, a gap in the catch-all provision of U.S. export control regulations could allow subnational actors to acquire American cruise missile or UAV technology for missile proliferation or terrorist purposes without violating U.S. export control laws or regulations. This gap in U.S. export control authority enabled American companies to legally export dual-use items to a New Zealand resident who bought the items to show how a terrorist could legally build a cruise missile. The gap results from current regulations that restrict the sale of certain dual-use items to national missile proliferation projects and countries of concern, but not to nonstate actors such as certain terrorist organizations or individuals.[14] The United States has other nonproliferation tools to address cruise missile and UAV proliferation—diplomacy, sanctions, and interdiction of illicit shipments of items—but these tools have had unclear results or have been little used.

[13]U.S. General Accounting Office, *Nonproliferation: Strategy Needed to Strengthen Multilateral Export Control Regimes*, GAO-03-43 (Washington, D.C.: Oct. 25, 2002).

[14]See 15 C.F.R. § 744.3(a). Although the Export Administration Regulations restrict exports to terrorist organizations and individuals that are listed in the regulations, the regulations do not apply to those that are not listed.

Compliance with Conditions on Exports of Cruise Missiles, UAVs, and Dual-use Items Seldom Verified through End-use Monitoring

End-use monitoring refers to the procedures used to verify that foreign recipients of controlled U.S. exports use such items according to U.S. terms and conditions of transfer. A post-shipment verification visit is a key end-use monitoring tool for U.S. agencies to confirm that authorized recipients of U.S. technology both received transferred items and used them in accordance with conditions of the transfer.

State is responsible for conducting PSVs on direct commercial sales of cruise missiles, UAVs, and related technology. We found that State did not use PSVs to assess compliance with cruise missile or UAV licenses having conditions limiting how the item may be used. These licenses included items deemed significant by State regulations.[15] Based on State licensing data, we identified 786 licenses for cruise missiles, UAVs, or related items[16] from fiscal years 1998 through 2002. Of these, 480 (61 percent) were licenses with conditions, while 306 (39 percent) were licenses without conditions. We found that State did not conduct PSVs for any of the 480 licenses with conditions and conducted PSVs on 4 of 306 licenses approved without conditions. A State licensing official stated that few post-shipment checks have been conducted for cruise missiles, UAVs, and related items because many are destined for well-known end users in friendly countries. However, over fiscal years 1998 through 2002, 129 of the 786 licenses authorized the transfer of cruise missile and UAV-related items to countries such as Egypt, Israel, and India. These countries are not MTCR members, which indicates that they might pose a higher risk of diversion.

In commenting on a draft of our report, State emphasized the importance of pre-license checks in verifying controls over the end user and end use of exported items and said that we did not include such checks in our analysis. We therefore reviewed the original 786 cruise missile and UAV licenses to determine how many had received pre-license checks, a possible mitigating factor reducing the need to conduct a PSV. We found that only 6 of the 786 licenses from fiscal years 1998 through 2002 that State provided us had been selected for pre-license checks.

[15]The International Trafficking in Arms Regulations define significant military equipment as articles for which special export controls are warranted because of their capacity for substantial military utility or capability. 22 C.F.R. § 120.7.

[16]Related items may include spare parts, software, or technical data.

Defense is responsible for monitoring transfers of cruise missiles, UAVs, and related technology provided under government-to-government agreements through the Foreign Military Sales program. Defense's end-use monitoring program has conducted no end-use checks related to cruise missile or UAV transfers, according to the program director. From fiscal years 1998 through 2002, DOD approved 37 agreements for the transfer of more than 500 cruise missiles and related items, as well as one transfer of UAV training software. The agreements authorized the transfer of Tomahawk land-attack cruise missiles, Standoff land-attack missiles, and Harpoon anti-ship cruise missiles, as well as supporting equipment such as launch tubes, training missiles, and spare parts. Approximately 30 percent of cruise missile transfers were destined for non-MTCR countries. Despite the 1996 legal requirement to create an end-use monitoring program, Defense's Golden Sentry monitoring program is not yet fully implemented. DOD issued program guidance in December 2002 that identified the specific responsibilities for new end-use monitoring activities. In addition, as of February 2004, DOD was conducting visits to Foreign Military Sales recipient countries to determine the level of monitoring needed and was identifying weapons and technologies that may require more stringent end-use monitoring. The program director stated that he is considering adding cruise missiles and UAVs to a list of weapon systems that receive more comprehensive monitoring.

The Commerce Department is responsible for conducting PSVs on exports of dual-use technology that might have military applications for cruise missiles and UAVs. Based on Commerce licensing data, we found that Commerce issued 2,490 dual-use licenses between fiscal years 1998 and 2002 for items that could be useful in developing cruise missiles or UAVs.[17] These licenses were for items to countries including India, Israel, Poland, Switzerland, Turkey, and the United Arab Emirates. Of these, Commerce selected 2 percent of the licenses, or 52 cases, for a PSV visit and completed visits for about 1 percent of the licenses, or 29 cases.

Other supplier countries place conditions on cruise missile and UAV-related transfers, but few reported conducting end-use monitoring once

[17]The Commerce Control List does not designate whether an item is useful for ballistic missiles or cruise missiles, according to Commerce officials, but identifies only that an item is useful for missile technology. The 2,490 cruise missile or UAV-related licenses that we reviewed were in dual-use missile-related categories of items in the Export Administration Regulations that the Commerce Department determined contain items that could be used for cruise missile purposes or for UAVs or their components.

they exported the items. While national export laws authorize end-use monitoring, none of the foreign government officials reported to us any PSV visits for cruise missile or UAV-related items. Government officials in France, Italy, and the United Kingdom stated that their respective governments generally do not verify conditions on cruise missile and UAV transfers and conduct few PSV visits of such exports. The South African government was the only additional supplier country responding to a written request for information[18] that reported it regularly requires and conducts PSVs on cruise missile and UAV transfers.

Conclusion

The continued proliferation of cruise missiles and UAVs poses a growing threat to the United States, its forces overseas, and its allies. Most countries already possess cruise missiles, UAVs, or related technology, and many are expected to develop or obtain more sophisticated systems in the future. The dual-use nature of many of the components of cruise missiles and UAVs also raises the prospect that terrorists could develop rudimentary systems that could pose additional security threats to the United States. Because this technology is widely available throughout the world, the United States works in concert with other countries through multilateral export control regimes whose limited effectiveness could be enhanced by adopting recommendations we have made in previous reports. U.S. export controls may not be sufficient to prevent cruise missile and UAV proliferation and to ensure compliance with license conditions. Because some key dual-use components can be acquired without an export license, it is difficult for the export control system to limit or track their use. Moreover, current U.S. export controls may not prevent proliferation by nonstate actors, such as certain terrorists, who operate in countries that are not currently restricted under missile proliferation regulations. Furthermore, the U.S. government seldom uses its end-use monitoring programs to verify compliance with the conditions placed on items that could be used to develop cruise missiles or UAVs. As a result, the U.S. government does not have sufficient information to know whether recipients of these exports are effectively safeguarding equipment and technology and, thus, protecting U.S. national security and nonproliferation interests. The challenges to U.S. nonproliferation efforts in this area, coupled with the absence of end-use monitoring programs by

[18]Governments responding to our request were Israel, Japan, South Africa, and Switzerland. Russia's and Canada's responses were provided too late to be included in our January 2004 report. Other countries that we queried provided no information on end-use monitoring.

several foreign governments for their exports of cruise missiles or UAVs, raise questions about how nonproliferation tools are keeping pace with the changing threat.

Recommendations for Executive Action

We recommended that the Secretary of Commerce assess and report to Congress on the adequacy of the export control regulations' catch-all provision to address missile proliferation by nonstate actors and on ways the provision might be modified. We also recommended that the Secretaries of State, Commerce, and Defense each complete a comprehensive assessment of the nature and extent of compliance with license conditions on cruise missiles, UAVs, and related dual-use technology. As part of the assessment, the departments should also conduct additional PSV visits on a sample of cruise missile and UAV licenses. This assessment would allow the departments to gain critical information that would allow them to better balance potential proliferation risks of various technologies with available resources for conducting future PSV visits.

Commerce and Defense partially concurred with our recommendations, which we modified to address their comments. State disagreed with the need to conduct a comprehensive assessment of the nature and extent of compliance with license conditions for cruise missile and UAV technology transfers. However, State said that it would consider conducting more PSVs on such technology transfers as it improves its monitoring program.

Mr. Chairman and Members of the Subcommittee, this concludes my prepared statement. I will be happy to answer any questions you may have.

Contact and Acknowledgments

For future contacts regarding this testimony, please contact Joseph Christoff at (202) 512-8979. David C. Maurer, Jeffrey D. Phillips, Claude Adrien, W. William Russell IV, Lynn Cothern, Stephen M. Lord, and Richard Seldin made key contributions to this statement.

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