



May 2017

BORDER SECURITY

Additional Actions Could Strengthen DHS Efforts to Address Subterranean, Aerial, and Maritime Smuggling

GAO Highlights

Highlights of [GAO-17-474](#), a report to congressional requesters

Why GAO Did This Study

As DHS has increased the security of overland smuggling routes, transnational criminal organizations have adapted their techniques to smuggle drugs and humans through alternative methods. These methods include cross-border tunnels, ultralight aircraft, panga boats, and recreational maritime vessels. While these methods account for a small proportion of known smuggling, they can be used to transport significant quantities of drugs or for terrorist activity. GAO was asked to review DHS's efforts to address subterranean, aerial, and maritime smuggling. This report addresses, among other things, (1) the known prevalence of the aforementioned smuggling methods, (2) efforts to address them, and (3) efforts to assess the results of activities to counter them. GAO analyzed relevant procedures, reports, and data for fiscal years 2011 through 2016. GAO also interviewed DHS officials and conducted site visits to locations in California, Arizona, and Florida, chosen based upon past detection of smuggling by the selected methods, among other things. The information from the site visits is not generalizable, but provided valuable insights.

What GAO Recommends

GAO is making six recommendations, including that DHS establish procedures for addressing tunnels, assess ultralight aircraft technology, and establish performance measures and targets. DHS concurred with four recommendations and disagreed with those to establish tunnel procedures and maritime performance measures, citing other efforts. GAO believes the recommendations remain valid, as discussed in the report.

View [GAO-17-474](#). For more information, contact Rebecca Gambler at (202) 512-8777 or gamblierr@gao.gov.

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What GAO Found

GAO's analysis of Department of Homeland Security (DHS) data showed that there were 67 discovered cross-border tunnels, 534 detected ultralight aircraft incursions, and 309 detected drug smuggling incidents involving panga boats (a fishing vessel) and recreational vessels along U.S. mainland borders from fiscal years 2011 through 2016. The number of known smuggling events involving these methods generally declined over this period, but they remain threats.

Examples of a Cross-Border Tunnel, Ultralight Aircraft, and Panga Boat



Source: (Left and middle) U.S. Customs and Border Protection; (Right) U.S. Coast Guard. | GAO-17-474

DHS has established various coordination mechanisms and invested in technology to address select smuggling methods in the subterranean, aerial, and maritime domains. For example, DHS established interagency task forces to investigate cross-border tunnels. However, DHS has not established comprehensive standard operating procedures for addressing cross-border tunnels, and we found that relevant officials were not aware of all DHS systems or offices with tunnel information. By establishing procedures for addressing cross-border tunnels, DHS could provide strategic guidance and facilitate information sharing departmentwide, consistent with standards for internal control. DHS has also invested or plans to invest in at least five technology projects to help detect and track ultralight aircraft. However, DHS has not assessed and documented how all of the alternative ultralight aircraft technical solutions it is considering will fully address operational requirements or the costs and benefits associated with these different solutions. This type of analysis could help better position DHS to use its resources effectively and ensure that operational needs are met, consistent with risk management best practices.

DHS has established high-level smuggling performance measures and collects data on smuggling by tunnels, ultralight aircraft, panga boats, and recreational vessels; however, DHS has not assessed its efforts specific to addressing these smuggling methods to, for example, compare the percent of detected panga boat and recreational smuggling events that are interdicted against targeted performance levels. By establishing measures and regularly monitoring performance against targets, managers could obtain valuable information on successful approaches and areas that could be improved to help ensure that technology investments and operational responses to address these smuggling methods are effective, consistent with standards for internal control. This is a public version of a For Official Use Only—Law Enforcement Sensitive report that GAO issued in February 2017. Information DHS deemed For Official Use Only—Law Enforcement Sensitive has been redacted.

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Abbreviations

AMO	Air and Marine Operations
AMOC	Air and Marine Operations Center
BEST	Border Enforcement Security Task Force
Border Patrol	U.S. Border Patrol
CBP	U.S. Customs and Border Protection
CCDB	Consolidated Counterdrug Database
Coast Guard	U.S. Coast Guard
CSS	Coastal Surveillance System
DHS	Department of Homeland Security
DOD	Department of Defense
DVD	Dark Vessel Detection
HSI	Homeland Security Investigations
LFAD	Low Flying Aircraft Detection
LSTAR	Lightweight Surveillance Target Acquisition Radar
ICE	U.S. Immigration and Customs Enforcement
IMDE	Integrated Maritime Domain Enterprise
OIG	Office of the Inspector General
RECOM	Regional Coordinating Mechanism
SDA	Small Dark Aircraft
S&T	Science and Technology Directorate
TARS	Tethered Aerostat Radar System
TPMO	Tunnel Program Management Office
ULAD	Ultralight Aircraft Detection

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May 1, 2017

The Honorable Bennie G. Thompson
Ranking Member
Committee on Homeland Security
United States House of Representatives

The Honorable Martha McSally
Chairwoman
Subcommittee on Border and Maritime Security
Committee on Homeland Security
United States House of Representatives

The U.S. government has identified illicit drug and human smuggling, particularly along the U.S-Mexico border (the southwest border), as a threat to national security that poses risks to public safety and contributes to illicit drug use that harms families and communities across the country. To enhance security along the southwest border, the Department of Homeland Security (DHS)—the agency responsible for securing the nation’s borders—has made significant investments in personnel, technology, and tactical infrastructure, such as fencing. In recent years, DHS reports that it has interdicted millions of pounds of drugs and hundreds of thousands of individuals attempting to illegally enter the United States, mostly along the southwest border.¹ In fiscal year 2015, DHS reported that it seized or prevented the delivery of more than 3.3 million pounds of narcotics, of which about 2.1 million pounds were seized at the southwest border. In addition, DHS reported that it apprehended more than 337,000 illegal entrants between ports of entry, of which about 331,000 were apprehended along the southwest border.²

As DHS has increased the security of overland smuggling routes, transnational criminal organizations have adapted their techniques to

¹U.S. Customs and Border Protection, *Fiscal Year 2015 CBP Border Security Report* (Dec. 22, 2015).

²Ports of entry are facilities that provide for the controlled entry into or departure from the United States for persons or materials. Specifically, a port of entry is any officially designated location (seaport, airport, or land border location) where DHS officers or employees are assigned to clear passengers, merchandise and other items, collect duties, and enforce customs laws; and where DHS officers inspect persons entering, applying for admission into, or departing the United States pursuant to U.S. immigration law.

smuggle drugs and humans through other methods to try to evade detection and interdiction. These adapted smuggling methods include but are not limited to illicit cross-border tunnels, ultralight aircraft, panga boats (a type of fishing vessel), recreational maritime vessels, and self-propelled semi-submersible and fully submersible vessels. While the selected smuggling methods listed above generally account for a small proportion of drug seizures between ports of entry—DHS data indicate there were 49 seizures from tunnels, ultralight aircraft, and the selected maritime conveyances in fiscal year 2015 compared to almost 12,900 total drug seizures—the actual number of smuggling events is unknown and thus seizure data may not reflect the true prevalence. Further, these selected smuggling methods can be used to transport significant quantities of drugs. For example, U.S. Customs and Border Protection’s (CBP) U.S. Border Patrol (Border Patrol) and U.S. Immigration and Customs Enforcement’s (ICE) Homeland Security Investigations (HSI)—the components within DHS responsible for securing the border between land ports of entry and investigating cross-border and immigration-related crimes, respectively—and other federal and local law enforcement partners seized over 17,000 pounds of marijuana and 300 pounds of cocaine from a cross-border tunnel discovered in 2013. In addition, the U.S. Coast Guard (Coast Guard) and CBP Air and Marine Operations (AMO)—the DHS components that share maritime law enforcement responsibilities—seized 5,700 pounds of marijuana from one panga boat in March 2015. Human smugglers and migrants have also used panga boats and recreational maritime vessels on occasion. In addition to posing drug and human smuggling threats, transnational criminal organizations’ utilization of these methods also raises concerns that they could be used to smuggle terrorists and their weapons into the United States.

You asked us to review DHS’s efforts to address threats posed by smuggling in the subterranean, aerial, and maritime environments. This report addresses the following questions:

1. What do DHS data show about the prevalence of smuggling by cross-border tunnel, ultralight aircraft, and selected maritime methods from fiscal years 2011 through 2016?
2. To what extent has DHS assessed the risks from smuggling by these methods?
3. How has DHS addressed smuggling by these methods?

4. To what extent has DHS assessed the results of its efforts to address smuggling by these methods?

This report is a public version of the prior sensitive report that we provided to you in February 2017.³ DHS and the Department of Defense deemed some of the information in the prior report as For Official Use Only—Law Enforcement Sensitive, which must be protected from public disclosure. Therefore, this report omits sensitive information on intelligence assessments, law enforcement operations, and capabilities of technologies used to address subterranean, aerial, and maritime smuggling. Although the information in this report is more limited in scope, it addresses the same questions as the sensitive report. Also, the overall methodology used for both reports is the same.

To address these questions, we focused our review on smuggling across U.S. mainland borders, including coastal borders, and we selected the following smuggling methods: cross-border tunnels, ultralight aircraft, panga boats, recreational maritime vessels, and self-propelled semi-submersible and fully submersible vessels.⁴ We selected these smuggling methods to include only those that would occur between ports of entry through means other than overland (given our focus on subterranean, aerial, and maritime smuggling); have been identified in strategy documents or by senior DHS officials and DHS officials with whom we met as a challenge or risk; and were of a magnitude that DHS had taken steps to address them. We analyzed DHS policies, procedures, and reports. We also conducted site visits to San Diego, El Centro, and Riverside, California; Nogales and Yuma, Arizona; and Miami and Key West, Florida. During these visits, we observed DHS approaches to addressing the selected smuggling methods and interviewed cognizant officials from Coast Guard; ICE HSI; and CBP's Border Patrol and AMO about their efforts. We selected these locations based upon a combination of factors, including the past detected use of the selected

³GAO, *Border Security: Additional Actions Could Strengthen DHS Efforts to Address Subterranean, Aerial, and Maritime Smuggling*, GAO-17-205SU (Washington, D.C.: Feb. 3, 2017).

⁴Given its focus on smuggling across U.S. mainland borders (i.e., borders of the contiguous United States), our review does not address smuggling in the transit zone—a 6 million square mile area that includes the eastern Pacific Ocean, the Gulf of Mexico, and the Caribbean Sea that is used to transport illicit drugs from South America to the United States. For additional information on DHS counterdrug efforts in the transit zone, see GAO, *Coast Guard: Resources Provided for Drug Interdiction Operations in the Transit Zone, Puerto Rico, and the U.S. Virgin Islands*, [GAO-14-527](#) (Washington, D.C.: June 16, 2014).

smuggling methods and the presence of coordinated DHS efforts to counter them in these areas. The information gathered from our site visits is not generalizable to other locations but provides insights into DHS's responses to these incursions and efforts to use risk and performance information to stop future smuggling incidents using these methods. Additionally, we interviewed headquarters officials from the Coast Guard; CBP's Border Patrol, AMO, and Office of Acquisition, the office responsible for CBP's acquisition of products and services; ICE HSI; and DHS's Science and Technology Directorate (S&T), the office responsible for leading research and development efforts across the department, to obtain information and perspectives on their efforts to assess and address threats posed by the selected smuggling methods.

To address the first question, we obtained and analyzed DHS data from fiscal years 2011 through 2016.⁵ We assessed the reliability of these data by performing electronic testing, among other things, and found the data sufficiently reliable for the purposes of reporting trends in the selected smuggling methods from fiscal years 2011 through 2016. To address the second question, we analyzed DHS risk, threat, intelligence, and capability assessments against GAO's risk management framework and leading practices for interagency collaboration.⁶ To address the third question, we analyzed DHS policies, procedures, and documentation on developing and acquiring new technology. We also interviewed officials from Border Patrol, AMO, ICE HSI, Coast Guard, and relevant Department of Defense (DOD) offices and organizations to determine the extent to which they have established mechanisms to coordinate assets, operations, and share technology to address the selected smuggling

⁵We selected this time period to identify recent trends in known smuggling events.

⁶GAO, *Risk Management: Further Refinements Needed to Assess Risks and Prioritize Protective Measures at Ports and Other Critical Infrastructure*, [GAO-06-91](#) (Washington, D.C.: Dec. 15, 2005); and *Managing for Results: Key Considerations for Implementing Interagency Collaborative Mechanisms*, [GAO-12-1022](#) (Washington, D.C.: Sept. 27, 2010). As discussed in [GAO-06-91](#), risk assessment addresses the process of evaluating threats—the probability that a specific type of incident will occur—and vulnerabilities—weaknesses that can be exploited—so that countermeasures might be instituted. Risk assessment can also include an assessment of the consequence of an event to help prioritize which assets or areas require greater protection; however, as consequences of smuggling can reasonably be expected to be similar among different methods of smuggling, our analysis focused on the threat and vulnerability aspects of risk assessment.

methods.⁷ We assessed these efforts against GAO’s leading practices for interagency collaboration and risk management framework.⁸ To address the fourth question, we analyzed DHS and component performance reports, among other things, and interviewed DHS officials to determine how they use performance information. We assessed DHS’s performance monitoring efforts against *Standards for Internal Control in the Federal Government* and performance assessment best practices.⁹ Additional details on our scope and methodology are contained in appendix I.

We conducted this performance audit from November 2015 to May 2017 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Selected Smuggling Methods

Transnational criminal organizations use subterranean, aerial, and maritime smuggling methods to try to avoid the security measures designed to address traditional overland smuggling routes. These smuggling methods—which are further described below—include but are not limited to, illicit cross-border tunnels, ultralight aircraft, panga boats, recreational maritime vessels, and self-propelled semi-submersible and fully submersible vessels. While the use of some of these conveyances is longstanding, DHS has identified changes in transnational criminal

⁷These DOD offices and organizations included U.S. Northern Command, which oversees Joint Task Force North, the organization responsible for supporting federal counterdrug activities along the southwest border; and the U.S. Southern Command, which oversees the Joint Interagency Task Force South, the primary operations center and coordinator for detecting and monitoring suspected air and maritime drug trafficking in the Caribbean, Central America, and South America.

⁸[GAO-06-91](#) and [GAO-12-1022](#).

⁹GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: September 2014); *Results-Oriented Government: Practices That Can Help Enhance and Sustain Collaboration among Federal Agencies*, [GAO-06-15](#) (Washington, D.C.: Oct. 21, 2005); *Tax Administration: IRS Needs to Further Refine Its Tax Filing Season Performance Measures* [GAO-03-143](#) (Washington, D.C.: Nov. 22, 2002); and *Standards for Internal Control in the Federal Government*, [GAO/AIMD-00-21.3.1](#) (Washington, D.C.: November 1999).

organizations' tactics, techniques, and procedures in using them that present new or different challenges to border security.

Cross-border tunnels. Cross-border tunnels are man-made sub-surface passageways that could be used to conceal the movement of humans or contraband and circumvent U.S. border defenses. Cross-border tunnels can be classified into one of four categories based on the predominant features of the tunnel, as described below and shown in figure 1:

- Sophisticated tunnels are elaborately constructed, may be of significant length and depth, and may have shoring, lighting, electricity, ventilation, and railways.
- Rudimentary tunnels are crudely constructed and shallow.
- Interconnecting tunnels exploit and connect to underground municipal infrastructure, such as storm water and sewage systems. Interconnecting tunnels typically connect to a rudimentary or sophisticated tunnel to operate; however, in these cases the entire tunnel would be classified into one category based on the predominant features of the tunnel. The exclusive unaltered use of underground municipal infrastructure to transport people or contraband is not considered a cross-border tunnel, but is another subterranean threat.
- Mechanically bored tunnels are those that are constructed primarily from mechanical means, instead of human diggers. Such mechanical means can include horizontal directional drilling devices and tunnel boring machines. These tunnels are generally lined by piping.

Figure 1: Cross-Border Tunnels



Source: (Clockwise from top left) U.S. Customs and Border Protection (CBP); U.S. Immigration and Customs Enforcement; Border Patrol; CBP. | GAO-17-474

Note: Clockwise from top left, this figure depicts an interconnecting tunnel, a rudimentary tunnel, pipes for constructing a mechanically bored tunnel, and a sophisticated tunnel.

Ultralight aircraft. As shown in figure 2, ultralight aircraft are single-seat aircraft that have an empty weight of about 250 pounds or less. Smugglers modify ultralight aircraft to carry drug loads by, for example, attaching large metal baskets.

Figure 2: Ultralight Aircraft



Source: U.S. Customs and Border Protection. | GAO-17-474

Maritime vessels. Selected maritime smuggling methods include panga boats, recreational vessels, and self-propelled semi-submersible and fully submersible vessels, which are further described below and shown in figure 3.

- Panga boats are open-hulled, flat-bottomed fishing vessels designed to arrive and depart directly from a beach. These vessels are between 20 and 60 feet long, and are fitted with one or more outboard motors.
- Recreational vessels are motorized vessels and sailboats used for leisure activities. Smugglers can exploit the ubiquity of legitimate recreational activity to blend in and avoid detection using these vessels.
- Self-propelled semi-submersible and fully submersible vessels have low profiles designed to have low radar reflectivity, making them difficult to detect. Semi-submersible vessels generally cut through the

water at wave height, while fully submersible vessels can be entirely submerged below the surface.¹⁰

Figure 3: Maritime Smuggling Vessels



Source: U.S. Coast Guard. | GAO-17-474

Note: Clockwise from top left, this figure depicts a recreational vessel used to transport migrants, a panga boat used to transport drugs, another recreational vessel, and a self-propelled semi-submersible vessel.

¹⁰DHS considers information on smuggling incidents involving self-propelled semi-submersible and fully submersible vessels law enforcement sensitive. Therefore, we do not discuss them in this report.

Roles and Responsibilities

Multiple components within DHS have responsibilities for addressing subterranean, aerial, and maritime smuggling, including ICE HSI, Coast Guard, and CBP's Border Patrol and AMO. Their specific roles and responsibilities with regard to the selected smuggling methods are discussed below.

Cross-border tunnels. CBP and ICE HSI share primary responsibility for countering cross-border tunnel threats. ICE HSI is responsible for cross-border tunnel investigations, Border Patrol is the primary component for interdiction, and CBP is responsible for the remediation of illicit tunnels. Both Border Patrol and ICE HSI efforts can lead to the identification of likely tunnel locations. In 2013, CBP established a Tunnel Program Management Office (TPMO) within Border Patrol to lead and coordinate CBP counter-tunnel efforts.

Ultralight aircraft. AMO, Border Patrol, and HSI have primary responsibility for countering ultralight aircraft smuggling. AMO's Air and Marine Operations Center (AMOC) is to surveil the airspace above the nation's border and identify the criminal use of noncommercial air conveyances, including ultralight aircraft. AMO and Border Patrol are responsible for responding to and interdicting ultralight aircraft used for smuggling, and ICE HSI is responsible for investigating ultralight aircraft incursions.

Maritime vessels. Coast Guard, AMO, and Border Patrol share responsibility for patrolling the U.S. maritime borders, and territorial sea (i.e., maritime approaches 12 nautical miles seaward of the U.S. coast) to interdict drugs and foreign nationals illegally entering the United States.¹¹ Coast Guard is the lead federal maritime law enforcement agency on the

¹¹The term "foreign national" refers to an "alien," defined under U.S. immigration law as any person who is not a U.S. citizen or national. See 8 U.S.C. § 1101(a)(3). The term "U.S. territorial sea" generally refers to the waters, 12 nautical miles wide, adjacent to the U.S. coast and seaward of the territorial sea baseline—normally the mean low water line along the U.S. coast—consistent with the principles, as recognized by the United States, of the Convention on the Territorial Sea and the Contiguous Zone, 15 U.S.T. 1606, and the 1982 United Nations Convention on the Law of the Sea (UNCLOS), 21 I.L.M. 1261. See 33 C.F.R. §§ 2.20, 2.22(a); and Territorial Sea of the United States of America, Pres. Proc. No. 5928, 54 Fed. Reg. 777 (Dec. 27, 1988). In addition, CBP's immigration-related enforcement authority over any U.S. external boundary encompasses U.S. land boundaries and territorial sea 12 nautical miles from U.S. baselines, consistent with international law. See 8 C.F.R. § 287.1(a)(1).

high seas (waters beyond 12 nautical miles seaward of the U.S. coast).¹² ICE HSI and AMO may investigate cross-border maritime smuggling.

In addition, within DHS, DHS S&T and CBP's Office of Acquisition (formerly the Office of Technology Innovation and Acquisition) are responsible for assisting DHS components in obtaining technology that can help them address the threats posed by the selected smuggling methods. DHS S&T is responsible for leading research and development, demonstration, testing, and evaluation to help bridge capability gaps. CBP's Office of Acquisition is responsible for providing policy and acquisition oversight across CBP to help obtain products and services that enhance border security.

Outside of DHS, DOD is the lead federal agency for the detection and monitoring of aerial and maritime transit of illegal drugs into the United States and operates systems, such as radar systems, that can be used in support of DHS and other federal, state, and local law enforcement activities.

¹²Under customary international law, and unless clearly indicated otherwise, "high seas" means all waters that are not the exclusive economic zone, territorial sea, or internal waters of the United States or any other nation. See 33 C.F.R. §§ 2.22, 2.30, 2.32(d). Coast Guard's, and AMO's, law enforcement authorities on the high seas are generally defined in statute and regulation. See, e.g., 14 U.S.C. § 89 (states Coast Guard's law enforcement authority on the high seas and U.S. waters, and provides that Coast Guard officers engaging in law enforcement pursuant to this section are deemed agents of the particular department or agency charged with the administration of the law being enforced); 19 U.S.C. § 1581 (CBP officers' authority over vessels or vehicles in the United States or within U.S. customs waters or a customs-enforcement area, or any other authorized place); Pres. Proc. No. 4865, 46 Fed. Reg. 48,107 (Sept. 29, 1981); and 19 C.F.R. § 162.3(a) (CBP officers may board any vessel in the United States or within U.S. customs waters; any American vessel on the high seas; and any vessel within a customs-enforcement area, but a foreign vessel is not to be boarded in violation of any treaty with the foreign government, or in the absence of a special arrangement).

Known Smuggling Events Persisted but Generally Declined from Fiscal Years 2011 through 2016, According to DHS Data

Tunnel Discoveries Were Concentrated on the Southwest Border and Have Generally Declined since Fiscal Year 2011

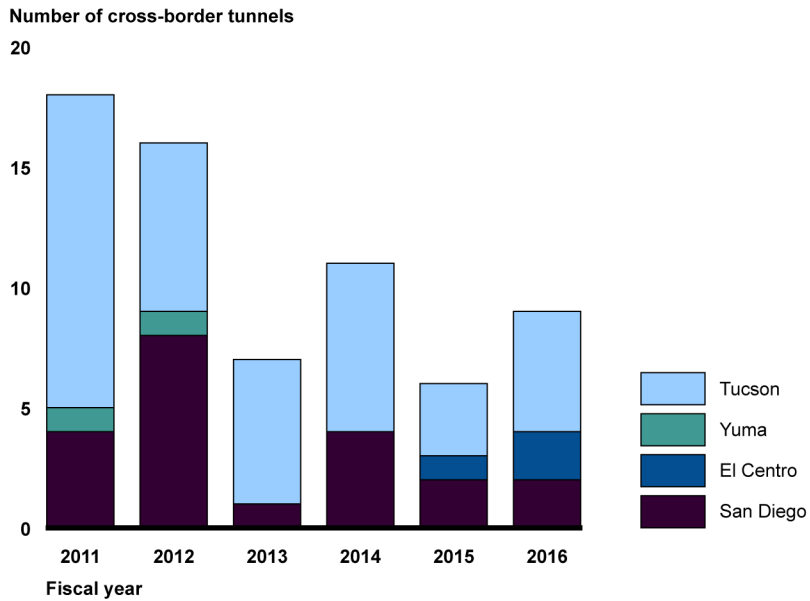
Our analysis of Border Patrol tunnel data showed that there were 67 cross-border tunnels discovered along U.S. borders from fiscal years 2011 through 2016, all located on the southwest border, as shown in figure 4.¹³ Nearly all cross-border tunnels—62 of 67—were discovered in Border Patrol’s Tucson, Arizona or San Diego, California sectors and the remaining 5 were discovered in the El Centro, California and Yuma, Arizona Border Patrol sectors.¹⁴ Additionally, the number of discovered cross-border tunnels generally declined during the period, with 18 tunnels discovered in fiscal year 2011 and 9 tunnels discovered in fiscal year 2016. However, CBP’s 2015 tunnel report to Congress found that illicit cross-border tunnels are a persistent threat to national security and that increased border enforcement efforts would likely continue to push illicit cross-border smuggling underground.¹⁵

¹³One cross-border tunnel was discovered on the northern border in the Blaine Border Patrol sector in fiscal year 2005, but this fiscal year falls outside the fiscal year range of focus—2011 through 2016—for this review.

¹⁴CBP has divided geographic responsibility for border security operations into sectors, each of which has a headquarters with management personnel. There are nine sectors along the southwest border.

¹⁵Department of Homeland Security, *Cross-Border Tunnels and Border Tunnel Prevention Fiscal Year 2015 Report to Congress* (Washington, D.C.: March 2016).

Figure 4: Cross-Border Tunnels Discovered by the Department of Homeland Security on U.S. Mainland Borders from Fiscal Years 2011 through 2016, by Border Patrol Sector



Source: GAO analysis of Department of Homeland Security data and information. | GAO-17-474

Our analysis of Border Patrol tunnel data also showed that sophisticated and interconnecting were the most common tunnel types discovered from fiscal years 2011 through 2016. In particular, 54 of the 67 discovered cross-border tunnels from fiscal years 2011 through 2016 were sophisticated and interconnecting types while 13 were rudimentary or mechanically bored. Additionally, most drug seizures associated with cross-border tunnels involved marijuana. For example, 21 of the 23 seizures involved marijuana, resulting in over 106,600 pounds of seized marijuana.¹⁶

¹⁶DHS data do not indicate the extent to which cross-border tunnels have been used for human smuggling; however, DHS has assessed that tunnels are predominantly used for marijuana smuggling.

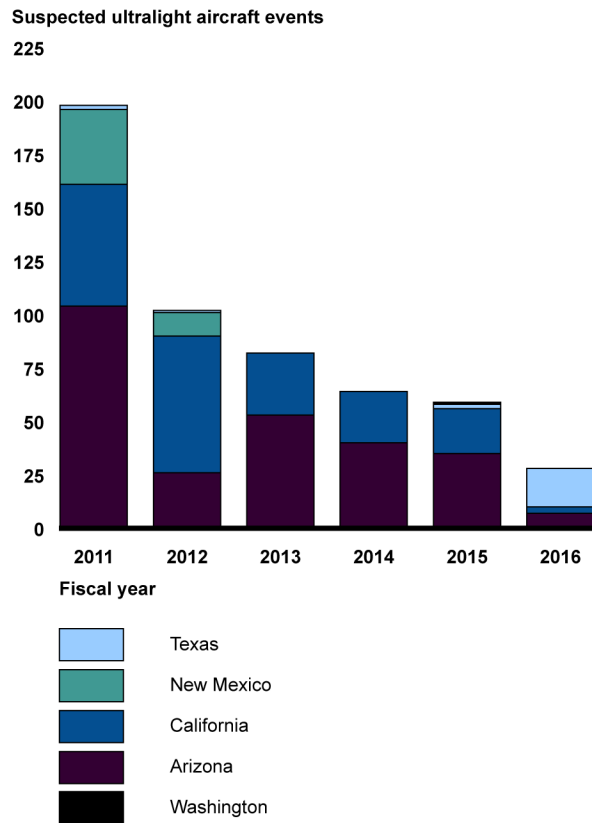
Detected Ultralight Aircraft Incursions Occurred Mostly on the Southwest Border and Have Generally Declined since Fiscal Year 2011

Our analysis of AMO data showed that there were 534 suspected ultralight aircraft incursions from fiscal years 2011 through 2016, all but one located on the southwest border in Arizona, California, New Mexico, and Texas.¹⁷ The number of suspected ultralight incursions declined each year from fiscal years 2011 through 2016. For example, according to AMO data, the overall number of suspected ultralight aircraft incursions declined from 199 in fiscal year 2011 to 28 in fiscal year 2016, as shown in figure 5. However, as discussed later in this report, AMO reports that ultralight aircraft are a flexible threat and a surge in activity could occur in any or all of the southwest border sectors. For example, while the overall number of ultralight aircraft incursions declined, an increase of ultralight activity occurred in Texas in fiscal year 2016. More specifically, 18 suspected ultralight aircraft incursions were detected in Texas in fiscal year 2016, compared to 5 suspected ultralight aircraft incursions for all of fiscal years 2011 through 2015. Additionally, most drug seizures associated with ultralight aircraft incursions were of marijuana. For example, more than 98 percent (100 of 102) of the seizures involved marijuana, resulting in over 22,000 pounds of seized marijuana. Less than two percent (2 of 102) of these seizures involved methamphetamine, which resulted in nearly 8 kilograms of methamphetamine seized.¹⁸

¹⁷One suspected ultralight aircraft incursion occurred in Washington state in fiscal year 2015. This analysis includes data on suspected ultralight aircraft incursions to U.S. mainland borders, but does not include ultralight aircraft events which occurred outside the U.S. mainland, such as in Mexico, or for which geographical information was not recorded.

¹⁸DHS data do not indicate the extent to which ultralight aircraft have been used for human smuggling; however, DHS has assessed that ultralight aircraft are primarily used to transport marijuana and typically do not land in the United States.

Figure 5: Ultralight Aircraft Incursions Detected by the Department of Homeland Security on U.S. Mainland Borders from Fiscal Years 2011 through 2016, by State



Source: GAO analysis of Department of Homeland Security data and information. | GAO-17-474

Note: One suspected ultralight aircraft incursion occurred in Washington in fiscal year 2015.

Known Maritime Drug Smuggling Events on Panga Boats and Recreational Vessels Mostly Occurred on the California Coast and Generally Declined since Fiscal Year 2011

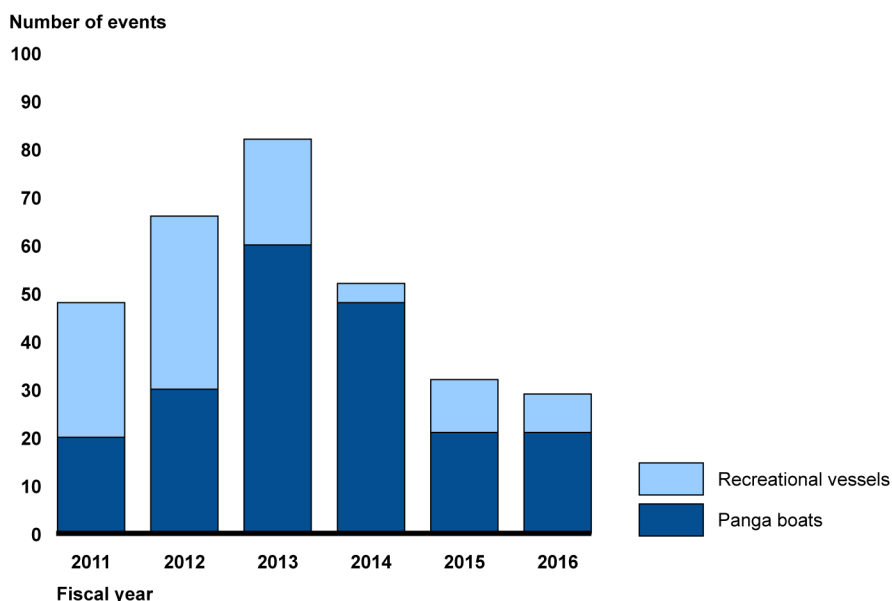
Our analysis of Consolidated Counterdrug Database (CCDB) data shows that the majority of known maritime drug smuggling events involving panga boats and recreational vessels along U.S. mainland borders—nearly 76 percent (234 of 309)—took place on the west coast, specifically California, and over 24 percent (75 of 309) took place on the southeast coast, northeast coast, and the southwest border.¹⁹ As depicted in figure 6, our analysis of CCDB data also showed that the number of known panga boat and recreational vessel drug smuggling events varied from fiscal years 2011 through 2016, with the highest number of events (82 of 309) occurring in fiscal year 2013 and lowest number of events occurring in fiscal years 2015 and 2016, with 32 and 29 respectively. However, the actual number of maritime smuggling events and the amount of drugs smuggled by these methods is unknown. Additionally, a higher proportion of events—nearly 65 percent (200 of 309)—involved motorized, open-hulled vessels, such as panga boats, and a lower proportion of events—over 35 percent (109 of 309)—involved recreational vessels.²⁰ Our analysis also showed that the majority of known panga boat and recreational vessel drug smuggling events—nearly 86 percent (265 of 309)—involved marijuana, resulting in over 413,400 pounds of seized

¹⁹We used DOD's Consolidated Counterdrug Database (CCDB), which consolidates existing drug-related data sets from U.S. federal government entities such as the Coast Guard, CBP, Defense Intelligence Agency, and Joint Interagency Task Force-South, to calculate the number of maritime drug smuggling events using panga boats and recreational vessels from fiscal years 2011 through 2016. Smuggling events in CCDB are categorized into four levels of certainty—confirmed, substantiated, suspect (1P), and suspect (2P)—all of which we included in our analysis. Confirmed means that law enforcement officials confiscated drugs associated with the event. Substantiated means that either visual identification of drugs aboard a conveyance occurred; or multiple, independent, corroborating intelligence reports with drug movement information such as departure, transfer, or delivery are either underway or complete. Suspect (1P) means that a single source of intelligence exists that documents, or has been assessed as documenting that illegal drugs departed, were transferred, were delivered, or were disrupted (e.g., by jettison) on a specific date or within a 3-day window. Suspect (2P) means that a single source of intelligence exists that documents (or has been assessed as documenting) that illegal drugs were scheduled to depart, be transferred, or be delivered on a specific date (generally, but not limited to, a 3-day window).

²⁰In addition to a general "panga" boat category, CCDB also includes three other categories of vessels that are motorized and open-hulled, consistent with a panga boat—lanchas, pleasure "go-fast" vessels less than 40 feet in length, and pleasure "go-fast" vessels greater than 40 feet. The panga boat data presented includes events involving all of these vessel categories. Additionally, the data presented on recreational boats includes all vessels categorized as motorized vessels and sailboats used for leisure activities, which include several types of pleasure craft—cabin cruiser, sailing vessel, yacht, sport fisher, and others.

marijuana from fiscal years 2011 through 2016. Nearly 14 percent (42 of 309) involved cocaine, resulting in over 3,200 kilograms of seized cocaine, and nearly 1 percent (2 of 309) involved methamphetamine, resulting in nearly 300 kilograms of seized methamphetamine from fiscal years 2011 through 2016.

Figure 6: Known Panga Boat and Recreational Maritime Vessel Drug Smuggling Events along U.S. Mainland Borders, Fiscal Years 2011 through 2016



Source: GAO analysis of Consolidated Counterdrug Database (CCDB) data and information. | GAO-17-474

Note: In addition to a general “panga” boat category, CCDB also includes three other categories of vessels that are motorized and open-hulled, consistent with a panga boat—lanchas, pleasure “go-fast” vessels less than 40 feet in length, and pleasure “go-fast” vessels greater than 40 feet. The panga boat data presented in this figure include events involving all of these vessel categories. Additionally, the data presented on recreational boats include all vessels CCDB categorized as motorized vessels and sailboats used for leisure activities, which include several types of pleasure craft—cabin cruisers, sailing vessels, yachts, sport fisher, and “other.”

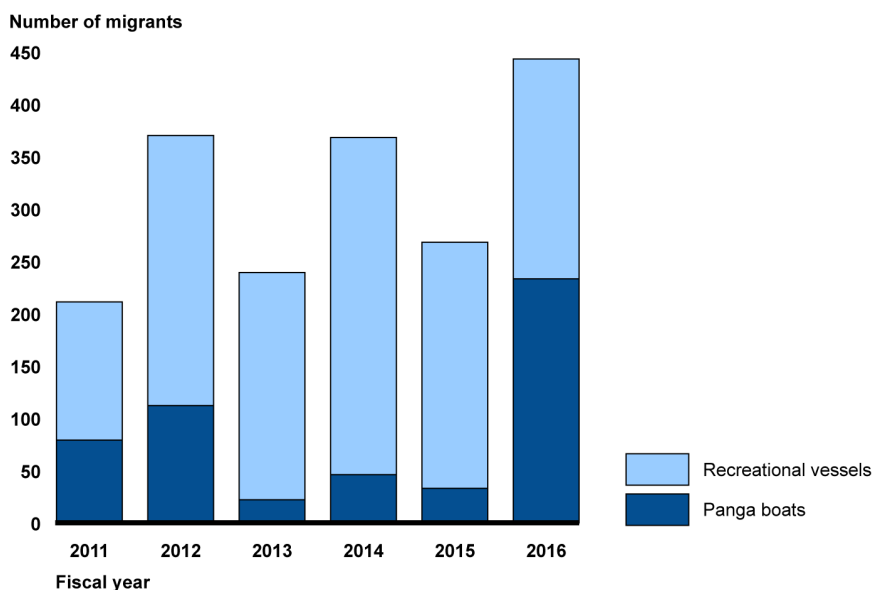
Known Maritime Migrant Smuggling on Panga Boats and Recreational Vessels Mostly Occurred off the Florida Coast and Has Generally Increased since Fiscal Year 2011

Our analysis of Coast Guard data from fiscal years 2011 through 2016 showed that the majority of the known migrants being smuggled along U.S. mainland borders using panga boats and recreational vessels were interdicted off the Florida Coast.²¹ Specifically, Coast Guard interdicted nearly 92 percent (1,798 of 1,963) of these migrants off the Florida Coast (e.g., North and South Florida Straits), and over 8 percent (165 of 1,963) on the southwest border or southern California coastline. Our analysis of Coast Guard data also showed that the number of migrants Coast Guard interdicted in maritime smuggling-related events on panga boats and recreational vessels varied over time but generally increased from fiscal years 2011 through 2016. In particular, the lowest numbers were interdicted in fiscal year 2011 (211) and 2013 (239) and the highest number was interdicted in fiscal year 2016 (443), as shown in figure 7. Additionally, of the migrants interdicted from fiscal years 2011 through 2016, about 72 percent (1,374 of 1,899) were on recreational vessels and about 28 percent (525 of 1,899) were on panga boats. In fiscal year 2016, this trend changed and Coast Guard interdicted over half (233 of 443) of

²¹We analyzed Coast Guard data to determine the number of interdicted migrants, country of origin, and vessel type used from fiscal years 2011 through 2016 because Coast Guard is the DHS component tasked with reporting maritime migrant data. The interdiction of migrants in the maritime environment refers to the interdiction of aliens coming by sea to the United States without necessary documentation. See High Seas Interdiction of Illegal Aliens, Pres. Proc. No. 4865, 46 Fed. Reg. 48,107 (Sept. 29, 1981). In addition to a “panga” boat category, Coast Guard data includes other vessel types that are motorized, open-hulled vessels consistent with a panga boat—lanchas and go-fasts. The panga boat data presented includes events involving all of these vessel categories. Additionally, our data analysis of recreational boats includes all vessels Coast Guard categorized as motorized recreational vessels and sailboats which included sailing vessels, pleasure craft, fishing vessels, and yolas. Because Coast Guard data is limited to migrant interdictions in which Coast Guard participated, it excludes any interdictions of migrants in the selected maritime vessels in which solely CBP was involved. Coast Guard data include three categories—smuggling, suspected smuggling, and no evidence of smuggling—to document whether a maritime migrant event was smuggling related or not. For the purposes of this report, we are including smuggling and suspected smuggling data. Coast Guard defines “smuggling” as an interdiction where firm evidence existed that the migrants onboard the vessel were being smuggled by an organizer and “suspected smuggling” as an interdiction where indicators of smuggling, but not firm evidence, existed. We do not include data from the third category, no evidence of smuggling, as that falls outside the scope of this review.

these maritime migrants on panga boats and under half (210 of 443) on recreational vessels.²²

Figure 7: Migrants Interdicted by the Department of Homeland Security on U.S. Mainland Borders Aboard Panga Boats and Recreational Maritime Smuggling Vessels, Fiscal Years 2011 through 2016



Source: GAO analysis of Department of Homeland Security data and information. | GAO-17-474

Note: In addition to a “panga” boat category, Coast Guard data includes other vessel types that are motorized, open-hulled vessels consistent with a panga boat—lanchas and go-fasts. The panga boat data presented in this figure include events involving all of these vessel categories. Additionally, our data analysis of recreational boats includes all vessels Coast Guard categorized as motorized recreational vessels and sailboats, which includes sailing vessels, pleasure craft, fishing vessels, and yolas.

²²Our review is focused on drug and migrant smuggling; however, many migrants using maritime routes do not hire smugglers and instead use homemade vessels known as rustics, chugs, and rafts. For example, Coast Guard data show that from fiscal years 2011 through 2016, 11,254 migrants were interdicted aboard rustics, chugs, and rafts, and in over 99 percent of these cases there was no indication of these individuals being smuggled by an organizer, such as a transnational criminal organization.

DHS Has Taken Steps to Assess Risks from the Selected Smuggling Methods but Could Enhance Assessment of Maritime Risk

DHS has Taken Steps to Assess the Smuggling Risk from Cross-Border Tunnels, Ultralight Aircraft, and Maritime Vessels

DHS has taken steps to assess the risks from smuggling by cross-border tunnels, ultralight aircraft, panga boats, and recreational vessels.²³ Specifically, DHS has assessed the threat of these selected smuggling methods by identifying geographic areas that have experienced greater incidence of smuggling and transnational criminal organization smuggling tactics. DHS has also assessed vulnerabilities by identifying capability gaps that affect the department's ability to address the threats posed by the selected smuggling methods.

Cross-border tunnels. To assess the risk from cross-border tunnels, CBP commissioned a 2010 assessment that identified areas along the southern borders of California, Arizona, New Mexico, and western Texas as having a high risk from tunneling activity, based on factors such as soil composition, water table, and known tunneling activity.²⁴ However, this assessment did not analyze the risk from rudimentary tunnels, interconnecting tunnels, or mechanically bored tunnels. CBP is currently in the process of obtaining a tunnel risk assessment tool that is to compute an estimated statistical likelihood for each of the four types of illicit tunnels along the southwest border. Further, unlike the 2010

²³As discussed in [GAO-06-91](#), risk assessment addresses the process of evaluating threats—the probability that a specific type of incident will occur—and vulnerabilities—weaknesses that can be exploited—so that countermeasures might be instituted. Risk assessment can also include an assessment of the consequence of an event to help prioritize which assets or areas require greater protection; however, as consequences of smuggling can reasonably be expected to be similar among different methods of smuggling, our analysis focused on the threat and vulnerability aspects of risk assessment.

²⁴Raytheon Company, *Tunnel Threat Map – Phase 2 Task 2 Final Report* (Springfield, VA: Mar. 26, 2010).

assessment, this tool is to use a web-based platform that can be updated to allow risk to be re-assessed on an ongoing basis. CBP officials expect this tool to be completed in June 2017.

ICE HSI and Border Patrol have also conducted intelligence assessments to identify areas that are at a higher risk from tunneling based on factors such as transnational criminal organization smuggling tactics and past tunneling activity. For example, a 2014 ICE HSI intelligence report states that transnational criminal organizations primarily use tunnels to transport narcotics, particularly marijuana, which is an important source of profit. Marijuana is also relatively bulky, and tunnels have the advantage of being able to accommodate large drug loads, according to the assessment.

CBP has also identified capability gaps that affect its ability to address cross-border tunnels. As part of the process to acquire tunnel detection technology, CBP sought an independent examination of factors that affect counter tunnel capabilities using a framework that assesses the state of doctrine; organization; training; materiel; leadership; personnel; facilities; and regulations, grants, and standards.²⁵ The analysis was issued in June 2013 and identified some gaps in tunnel technology as well as non-technological capability gaps in doctrine, among other things. CBP's TPMO is responsible for addressing these capability gaps, and we discuss the status of key efforts later in this report.

Ultralight aircraft. To assess the risk from ultralight aircraft, AMO has analyzed ultralight aircraft data and, as previously discussed, found that the majority of ultralight incursions have occurred in Arizona and California, with a recent uptick in activity in Texas. AMO has reported in its General Aviation Threat Assessments that ultralight aircraft are a flexible smuggling method and that a surge in activity could occur in any or all of the southwest border sectors, shifting when there is an increased law enforcement presence. To keep relevant Border Patrol agents informed of trends and recent ultralight aircraft activity, AMO and Border Patrol officials stationed at AMO's AMOC, which monitors the airspace on the border, send each Border Patrol sector along the southwest border a monthly briefing as well as provide real-time coordination at the time of the incursions, as discussed later in this report.

²⁵Homeland Security Studies and Analysis Institute, *CBP Counter-Tunnel Threat Analysis: DOTMLPF+RGS Capability Assessment* (Falls Church, VA: June 25, 2013).

AMO has also analyzed ultralight aircraft smuggling tactics and found that ultralight aircraft smugglers generally will not land in the United States and instead will airdrop the narcotics load in order to quickly return to Mexico. AMO officials explained that pilots use this method hoping to avoid arrest. According to AMO analysis, the narcotics are generally dropped within a couple of miles of a main road so that the smugglers can quickly collect the narcotics and blend in with other vehicle traffic on the road. Additionally, AMO reports that ultralight aircraft smugglers operate like sub-contractors for transnational criminal organizations, and are financially responsible for the narcotics they transport. As a result, ultralight aircraft primarily transport low- to mid-grade marijuana, with an average load size around 200 pounds, because the cost of higher value narcotics is prohibitive and the risk from destroying a load during the air drop is too great.

CBP has identified gaps in its air domain awareness and made finding a technical solution a priority in 2009. CBP has efforts underway to address these capability gaps, which we discuss later in this report. According to CBP analysis, CBP has sufficient capabilities to respond to and resolve detected ultralight aircraft incursions and changes in non-technical capabilities, such as increased manpower, will not significantly enhance its ability to address the threat posed by ultralight aircraft.

Maritime vessels. To assess the risk from maritime smuggling through noncommercial vessels such as panga boats and recreational vessels, Coast Guard has produced annual cross-border drug smuggling intelligence assessments since 2014. These assessments have consistently identified Coast Guard Districts 11, 8, and 7, which cover the coastal borders of California and the Southeast United States from Texas through the east coasts of Florida, Georgia, and South Carolina, as well as Puerto Rico, as the primary threat area for cross-border drug

smuggling by noncommercial vessels.²⁶ Further, the Coast Guard intelligence assessments identified marijuana smuggling from Mexico to California by panga boats as a primary threat to the U.S. mainland. In the fiscal year 2015 assessment, the most recent available, Coast Guard found that as with previous years, panga boat smuggling routes tended to be hundreds of miles off shore, with intended destinations north of Los Angeles—most often between Santa Barbara and San Luis Obispo, California—to avoid U.S. maritime law enforcement.²⁷

Coast Guard has also assessed the risk from maritime migration through its biennial National Maritime Strategic Risk Assessment.²⁸ Coast Guard's 2014 risk assessment, the most recent available, found that illegal maritime immigration was associated with societal costs and threats to the safety of the migrants at sea, and was ranked 16 among the 27 incident types assessed in terms of the impact and severity of risks. Specifically, Coast Guard found that the risk from maritime migration was lower than the risks from drug smuggling, natural disasters, and over-fishing, among others, and greater than the risks from events such as an

²⁶Puerto Rico is outside of the scope of this review; however, it falls within the transit zone, which, as previously noted is a 6 million square mile area that includes the eastern Pacific Ocean, the Gulf of Mexico, and the Caribbean Sea that is used to transport illicit drugs—primarily cocaine—from South America to the United States. Disrupting the flow of illicit drugs through the transit zone is an important component of the Office of National Drug Control Policy and DHS's counterdrug strategies. Both Coast Guard and CBP contribute assets and manpower to international efforts to interdict drugs in the transit zone. Coast Guard officials explained that interdicting drugs in the transit zone can have a greater impact on disrupting the flow of drugs to the United States than interdicting closer to U.S borders because they can interdict the large, multi-ton drug loads that transnational criminal organizations transport from the source countries in South America to countries in Central America. Once the drugs reach the secondary location, they are generally broken into smaller loads for further distribution, according to Coast Guard officials. For additional information on DHS counterdrug efforts in the transit zone, see [GAO-14-527](#).

²⁷U.S. Coast Guard, *Fiscal Year 2015: United States Maritime Cross-Border Drug Smuggling*, ICC-CRIM-001-16 (Washington, D.C.: June 7, 2016).

²⁸Whereas the data on maritime migrant interdictions presented earlier in this report includes only incidents where panga boats and recreational vessels were used and there was evidence or indicators that an organizer was hired to smuggle the migrants, maritime migration includes all migrants attempting to enter the United States via maritime routes, regardless of vessel type.

accidental hazardous material release or a debris or sewage discharge, among others.²⁹

The National Maritime Strategic Risk Assessment is designed to analyze risk at a national level to help inform resource allocation decisions and does not provide assessments at the local level or by vessel type; however, Coast Guard and its DHS partners have also conducted regional assessments. DHS's Southern Border and Approaches Campaign Plan identified maritime migration from Cuba, Hispaniola, and the Bahamas as the primary illegal maritime migration threat, and Florida-based Coast Guard, AMO, ICE HSI, and Border Patrol have analyzed maritime migration from these areas.³⁰ For example, intelligence assessments issued from 2015 through spring 2016 found that there has been an increase in Cuban maritime migration that will likely continue due to perceptions that U.S. immigration policies for Cubans will change.³¹ Coast Guard assessments show that most Cuban migrants use

²⁹U.S. Coast Guard, *National Maritime Strategic Risk Assessment 2014 Report* (Sept. 31, 2014). Coast Guard's National Maritime Strategic Risk Assessment generates estimates of risk with a low level of fidelity and thus risk rankings do not have a high level of precision. With regard to drug smuggling, Coast Guard calculates risk based on cocaine movements in the transit zone, which is consistent with its management performance measure and national counterdrug strategies, but is outside of the scope of this review and does not account for risks posed by U.S. cross-border maritime smuggling. For additional information on Coast Guard's risk model, see GAO, *Coast Guard: Security Risk Model Meets DHS Criteria, but More Training Could Enhance Its Use for Managing Programs and Operations*, [GAO-12-14](#) (Washington, D.C.: Nov. 17, 2011).

³⁰In May, 2014, the Secretary of Homeland Security directed the creation of the Southern Border and Approaches Campaign, a unified approach to more effectively coordinate the assets of Coast Guard, CBP, ICE, U.S. Citizenship and Immigration Services, and other departmental resources. The campaign's intent is for effective enforcement and interdiction across land, sea, and air; to degrade transnational criminal organizations; and to do these things while still facilitating flow of lawful trade, travel, and commerce across U.S. borders.

³¹On January 12, 2017, DHS rescinded certain policies unique to Cuban nationals. Specifically, DHS eliminated a special parole policy for arriving Cuban nationals commonly known as the "wet-foot/dry-foot" policy, as well as a policy for Cuban medical professionals known as the Cuban Medical Professional Parole Program. Currently, DHS's policy is to consider any requests for such parole in the same manner as parole requests filed by nationals of other countries. See DHS, Press Office, Fact Sheet: Changes to Parole and Expedited Removal Policies Affecting Cuban Nationals (Washington, D.C.: Jan. 12, 2017). DHS also eliminated an exemption that previously prevented the use of expedited removal proceedings for Cuban nationals apprehended at ports of entry or near the border. See *Eliminating Exception to Expedited Removal Authority for Cuban Nationals Arriving by Air*, 82 Fed. Reg. 4769 (Jan. 17, 2017) (codified at 8 C.F.R. pts. 235, 1235).

homemade vessels known as rustics, rafts, or chugs to travel to the Florida Keys; however, transnational criminal organizations commonly use stolen or personally owned recreational vessels to transport migrants, according to a fiscal year 2016 AMO assessment. Coast Guard, ICE HSI, AMO, and Border Patrol reported that another key maritime migrant smuggling route is from the Bahamas to Southeast Florida, a trip that can be as short as 45 nautical miles.

Coast Guard data show that maritime migrant smuggling occurs less frequently along the California coast, but California-based Coast Guard, AMO, ICE HSI, and Border Patrol officials we met with have also assessed this threat. Personal watercraft, such as jet skis, were the most commonly used vessel to smuggle migrants in the region, according to a joint fiscal year 2015 California Coastal Region assessment, though recreational vessels and panga boats were also used.³² In addition, the assessment reports that most migrant smuggling routes along the California coastal region are destined for locations south of Los Angeles, California.

Coast Guard and CBP have assessed maritime security capability gaps through DHS S&T's Integrated Product Team process, which brings together component leaders to identify and prioritize technological capability gaps. As discussed later, DHS S&T has projects underway to enhance maritime domain awareness. Border Patrol and AMO have also initiated their own capability gap assessments to identify gaps and technical and nontechnical solutions to address gaps across the range of each component's responsibilities, to include maritime security. Border Patrol is implementing its capability gap assessment and is expected to complete the documentation of requirements to address capability gaps in all Border Patrol sectors in 2019, according to officials. AMO expects to complete its capability gap assessment by the end of fiscal year 2017.

³²California Coastal Regional Coordinating Mechanisms, *California Coastal Region Maritime Smuggling Intelligence Review FY 2015* (April 2016).

DHS Could Enhance Assessment of Maritime Smuggling Risk by Standardizing Definitions for Maritime Vessels Departmentwide

Coast Guard, AMO, Border Patrol, and ICE HSI all capture information on the types of maritime vessels used for smuggling drugs and migrants to inform their counter smuggling efforts; however, the use of different terminology for vessels in different regions and different data systems has impeded DHS’s ability to develop a full picture of the risks from panga boat and recreational vessel smuggling nationwide. For example, as shown in table 1, the definition of a panga is different in the interagency California coastal region intelligence assessment and data system than it is in Coast Guard’s intelligence assessments, with the former specifying that a panga would have “multiple” outboard motors while the latter states that a panga would have “one or two” outboard motors. Furthermore, both definitions of pangas overlap with other categories of vessels, including “lanchas,” which Coast Guard has defined as open-hulled vessels with one outboard motor used in the Gulf Coast region, and “go-fasts,” which Coast Guard has defined as an open-hulled vessel with one or more outboard motors that can operate at 25 knots in shallow water. The panga boats that have been used to smuggle drugs in the California coastal region are classified as “lanchas” and “go-fast” vessels in the government-wide CCDB and “go-fasts” in a Coast Guard report and a national counternarcotic strategy.

Table 1: Maritime Vessel Definitions from Various Databases and Sources Used by Department of Homeland Security, Fiscal Years 2011-2016

Vessel Type	Definition	Source
Panga	Open-hulled, flat bottomed fishing vessels designed to accommodate arrivals and departures directly from a beach. Pangas are typically between 25-35 feet long and have multiple outboard motors.	California Coastal Region Maritime Smuggling Intelligence Review and Maritime Tracking System
	Typically originating in Mexico or Guatemala and have one or two outboard motors. Also called “shark boats.”	Coast Guard Maritime Cross-Border Drug Smuggling Intelligence Assessment
Ecuadorean Panga	A small go-fast, typically traveling from Ecuador to Guatemala.	Consolidated Counterdrug Database
Lancha	Open-hulled fiberglass vessels that are 20-30 feet long and powered by one outboard motor. Vessels operate freely and in great numbers in the Gulf of Mexico.	Coast Guard Maritime Cross-Border Drug Smuggling Intelligence Assessment
	Small passenger motorboat that in images resembles a go-fast.	Consolidated Counterdrug Database
	Small outboard powered fishing boat.	Coast Guard Maritime Migrant Data
Pleasure Craft	Motor and sailing vessels used for legitimate recreational purposes.	California Coastal Region Maritime Smuggling Intelligence Review and Maritime Tracking System

Vessel Type	Definition	Source
Go-fast	A 28- to 45- foot open-hull boat with one or more high-powered outboard motors, capable of operating in excess of 25 knots in shallow waters.	Coast Guard Maritime Cross-Border Drug Smuggling Intelligence Assessment
	Speed boat.	Coast Guard Maritime Migrant Data
Pleasure Craft Go-Fast	Vessel length is 40 feet or smaller.	Consolidated Counterdrug Database
Pleasure Craft Sailing Vessel	Sailing vessels including sailing yachts.	Consolidated Counterdrug Database
Pleasure Craft Yacht	Exclusively motor yachts.	Consolidated Counterdrug Database

Source: GAO analysis of Consolidated Counterdrug Database and Department of Homeland Security information. | GAO-17-474

Additionally, the term “go-fast” is used by Coast Guard, AMO, Border Patrol, and ICE HSI in various assessments to describe maritime smuggling methods in Florida. However, the go-fast smuggling in Florida includes vessels that can blend in with the recreational boating traffic in the area—or what the California coastal region DHS partners would term a “pleasure craft.”

AMO officials stated that differences in terminology do not impact operations at the local level, as officials are familiar with smuggling methods in their area and local vernacular; however, these differences make it difficult to synthesize information across components and regions to get a full picture of the threats posed by panga boat and recreational vessel smuggling nationwide. Facilitating this type of comprehensive assessment could help better inform management resource allocation decisions. For example, Coast Guard and AMO officials we met with in California and Florida stated that vessel types are associated with different smuggling tactics that require different operational response; recreational vessels used for smuggling narcotics that blend into legitimate recreational maritime traffic may require additional tools, such as human intelligence and training, canines, and non-intrusive inspection equipment to identify suspect vessels and hidden compartments. In comparison, the officials told us that more “overt” forms of smuggling, such as panga boats with large unconcealed, or minimally concealed drug loads, and recreational vessels overcrowded with migrants, are relatively easier to address since they can be detected and identified as suspect by maritime patrol aircraft.

Differences in regional parlance and varying options in different databases have contributed to the lack of standardized definitions and categories of vessels, according to Coast Guard, AMO, and ICE HSI officials. Managers of the interagency CCDB recognized the issue of overlapping vessel definitions and are planning to revise the vessel

options to eliminate overlapping categories such as “lancha” and “panga” under the category of “go-fast.” However, these changes will not affect the other databases or threat assessments used by DHS. Key considerations for implementing interagency collaborative mechanisms state that developing a common terminology can help bridge organizational cultures to enhance and sustain interagency efforts.³³ DHS has also recognized the importance of common definitions and produces an annual DHS Lexicon to define terms and reduce the possibility of misunderstanding when communicating across the department and help DHS develop and manage knowledge, information, and data. Coast Guard, AMO, Border Patrol, and ICE HSI officials agreed that it would be beneficial to have standard vessel definitions DHS-wide to enhance the quality of data and intelligence assessments and facilitate information sharing across agencies.

However, Coast Guard and ICE HSI officials noted that it could be challenging to identify all relevant data systems that use vessel types and determine how to reconcile older data with new categories. While we recognize that this could be challenging, there are upcoming opportunities DHS could leverage to efficiently develop and promulgate common vessel definitions and categories. For example, once changes to CCDB vessel categories are finalized, relevant DHS components could consider whether these vessel categories will meet their needs. Additionally, in the next year DHS plans to draft a new Small Vessel Security Strategy to address the risks that terrorists will use small vessels for transportation or an attack, which could be used as a forum for developing standard definitions for the various types of small vessels for inclusion in the DHS Lexicon and use in future threat assessments.³⁴ If updating all databases proves to be difficult or costly, components could, for example, create common terminology by documenting a crosswalk that demonstrates the relationship between their vessel categories and established DHS-wide vessel definitions. By standardizing definitions of panga boats and

³³[GAO-12-1022](#).

³⁴DHS defines a small vessel as any watercraft regardless of method of propulsion, less than 300 gross tons—a category which would generally include panga boats and recreational vessels. Although there is no exact correlation between a vessel’s length and its gross tonnage, a vessel of 300 gross tons is approximately 100 feet in length, according to DHS. For additional information about DHS’s implementation of the current Small Vessel Security Strategy, see GAO, *Maritime Security: DHS Could Benefit from Tracking Progress in Implementing the Small Vessel Security Strategy*, [GAO-14-32](#) (Washington, D.C.: Oct. 31, 2013).

recreational vessels in the DHS Lexicon for use in future threat assessments, DHS would be better able to leverage its threat assessments to develop a clearer and more comprehensive picture of the threats posed by these maritime smuggling methods across the nation. Having a complete picture of these maritime smuggling threats could, in turn, help better inform management decisions, including resource allocation decisions.

DHS Coordinates Among Partners and Uses Technology to Address the Selected Smuggling Methods, but Could Strengthen its Efforts

DHS Uses Various Coordination Mechanisms to Address Smuggling by Cross-Border Tunnels, Ultralight Aircraft, and the Selected Maritime Methods

DHS components have established various coordination mechanisms to address smuggling by cross-border tunnels, ultralight aircraft, panga boats, and recreational maritime vessels, and to improve coordination among federal, state, and local partners. As previously discussed, in 2015 DHS established a Border Security Integrated Product Team composed of representatives from DHS S&T, CBP, ICE, and Coast Guard to identify technology gaps and prioritize research and development efforts for enhancing border security. We discuss research and development projects that address the selected smuggling methods later in this report. In addition, DHS has established coordination mechanisms that specifically target the selected smuggling methods.

Cross-border tunnels. DHS has established two interagency Border Enforcement Security Task Force (BEST) Tunnel Task Forces to conduct investigations into cross-border tunnel incursions. These Tunnel Task Forces are located in San Ysidro, California, and Nogales, Arizona, within the two Border Patrol sectors with the highest number of illicit cross-border tunnels found.³⁵ Participants in the task forces include Border

³⁵The Tunnel Task Force in San Ysidro, California, was established in 2003 and the Tunnel Task Force in Nogales, Arizona, was established in 2012.

Patrol, ICE HSI, and the Department of Justice's Drug Enforcement Administration, among others. State and local law enforcement officials sometimes provide additional support during a tunnel investigation. For instance, state and local police will, at times, help provide personnel to surveil or search a warehouse suspected of housing a tunnel exit. In addition to participating in the interagency Tunnel Task Force, Border Patrol established a Western Corridor Tunnel Interdiction Group in California to patrol the subterranean drainage infrastructure to locate, map, and monitor interconnected tunnels. Also, Border Patrol and ICE officials in other sectors where tunnels pose threats have established informal task forces and partnerships to facilitate information sharing and leverage intelligence and resources on counter tunnel efforts. For instance, Border Patrol and ICE HSI officials in El Centro, California, stated they have monthly meetings to discuss trends and share information.

DHS further coordinates with other federal partners, such as DOD, to identify common tunnel requirements, test tunnel technologies, and exchange tunnel-related information. For instance, DHS officials participate in annual meetings led by the DOD Combating Terrorism Technical Support Office to discuss subterranean trends, developments, requirements, new and emerging technologies, and build relationships. Additionally, Border Patrol officials in Nogales, Arizona, coordinate with the DOD's Combating Terrorism Technical Support Office and Asymmetric Warfare Group to test tunnel technology and operational scenarios in tunnels.

Ultralight aircraft. AMO's AMOC surveils border airspace for ultralight aircraft incursions and works with AMO and Border Patrol agents in the field to interdict ultralight aircraft drug loads and crews. Currently, AMOC's Air and Marine Operations Surveillance System can help detect ultralight aircraft. AMOC officials stated they can manually monitor movement patterns on border airspace radar feeds and look for indicators of ultralight activity. When AMOC officials detect a possible ultralight incursion, they then call the relevant Border Patrol and ICE HSI stations. Conversely, if Border Patrol agents or another federal law enforcement partner suspects a possible ultralight aircraft incursion, they call AMOC in order to confirm detection on radar. Border Patrol and ICE HSI representatives stationed at AMOC stated that their co-location further facilitates interagency coordination. AMO and Border Patrol officials noted transnational criminal organizations have employed counter-measures to thwart their efforts. For example, transnational criminal organizations use drones and scouts to conduct counter-surveillance. In order to help

mitigate the challenges, select Border Patrol sectors and ICE HSI field offices created ad hoc coordination mechanisms and operations to partner and better focus resources when the threat posed by ultralight aircraft is high in their areas of responsibility. These sectors and offices also established tip lines for the general public to report suspicious air activity and instruct their agents on ultralight detection methods.

DHS also coordinates with DOD to share information related to aerial incursions, identify technical solutions, and coordinate assets to support interdiction efforts. For example, DHS leverages DOD as well as Federal Aviation Administration radars to feed into Air and Marine Operations Surveillance System. Conversely, AMOC officials stated that AMOC has also provided a number of DOD entities access to the Air and Marine Operations Surveillance System, to help enhance their domain awareness and identify suspicious targets.

Maritime vessels. In 2011, DHS established Regional Coordinating Mechanisms (RECOM) to coordinate interagency operations and avoid duplicative efforts to address U.S. mainland threats in the maritime domain, including panga boats and recreational vessels.³⁶ There are RECOMs in California, Florida, and Texas, addressing the primary threat areas of maritime smuggling. Participants include the Coast Guard, CBP AMO and Border Patrol, ICE HSI, the U.S. Attorney's Offices, and may also include state and local law enforcement. To address maritime smuggling, RECOM partners host joint teleconferences to create interagency interdiction plans, coordinate asset deployment and schedules to de-conflict missions, and discuss post-interdiction prosecution of migrant cases. RECOMs also serve to share information and intelligence on the threats posed by maritime smuggling and trends among partners. While DHS component officials identified some challenges in addressing maritime smuggling, component officials also reported that the RECOMs help mitigate challenges. For example, DHS component officials noted the vastness of the maritime environment precludes DHS officials from having full awareness of the presence of maritime vessels, including panga boats and recreational vessels.

³⁶RECOMs were officially established in 2011 through the Maritime Operations Coordination Plan, which was signed by the Director of ICE HSI, the Commissioner of CBP, and the Commandant of the Coast Guard. The Maritime Operations Coordination Plan directs these agencies to utilize the fusion of intelligence, planning, and operations to target the threat of transnational terrorist and criminal acts along the coastal border. Coast Guard serves as the lead agency responsible for planning and coordinating among components.

However, the RECOMs coordinate and leverage each partner's resources in order to maximize assets and expand coverage. Additionally, Coast Guard and AMO perform routine patrols on aerial and marine assets to monitor potential smuggling routes, conduct public outreach at marinas regarding smuggling, surveil for transnational criminal organization scouts, and perform random searches of recreational vessels with canines. Coast Guard officials indicated the Federal Emergency Management Agency's Operation Stonegarden grants have been instrumental in involving state and local law enforcement agencies in coastal border security operations.³⁷ For example, Operation Stonegarden local law enforcement partners helped the San Francisco RECOM interdict 10 subjects involved in a panga boat landing in 2015.

RECOMs also conduct maritime smuggling investigations. For example, the San Diego BEST Marine Task Force is the investigative entity for the San Diego RECOM. Participants in the Marine Task Force include ICE HSI, Border Patrol, AMO, Coast Guard's Investigative Service, San Diego Harbor Police, San Diego Sheriff's Department, and the California Army National Guard.

As with cross-border tunnels and ultralight aircraft, DHS components also coordinate with DOD to share information and leverage technical solutions for addressing maritime smuggling. For example, DHS components and DOD share some cross-border drug removal data, in order to increase domain awareness. Additionally, DHS coordinates with DOD to address maritime smuggling in the transit zone through the Joint Interagency Task Force South—a national task force that facilitates international and interagency interdiction of illicit maritime trafficking. Joint Interagency Task Force South officials told us the task force primarily operates in the transit zone rather than along U.S. mainland borders due to the large quantities of narcotics being moved from source countries through the transit zone.

³⁷The Operation Stonegarden program supports enhanced cooperation and coordination among CBP, Border Patrol, and local, tribal, territorial, state, and federal law enforcement agencies. The program funds investments in joint efforts to secure U.S. borders along routes of ingress from international borders to include travel corridors in states bordering Mexico and Canada, as well as states and territories with international water borders.

DHS Could Enhance its Collaboration Efforts to Address Cross-Border Tunnels with More Centralized Leadership and Guidance

DHS's approach to countering cross-border tunnels centers on collaboration to leverage the efforts of multiple agencies; however, no comprehensive department-level standard operating procedures have been established to provide strategic guidance and facilitate information sharing departmentwide. As previously discussed, ICE is the primary agency responsible for tunnel investigations, and CBP is responsible for tunnel interdiction and remediation. Both ICE and CBP have designated an authority within their agency for counter-tunnel responsibilities. Specifically, ICE HSI has designated a Unit Chief in its Contraband Smuggling Unit as responsible for oversight and coordination of ICE tunnel investigations at the headquarters-level, among other things. CBP designated Border Patrol as the primary point of contact for tunnels within CBP in 2010, and tasked it with establishing standardized detection and reporting procedures for CBP entities. CBP later formed the Tunnel Program Management Office (TPMO) in 2013 to serve as CBP's centralized coordination point for addressing tunnels. However, as of November 2016, neither of these ICE or CBP authorities had established standard operating procedures guiding how agencies should individually or collectively address tunnels used for smuggling. A tunnel capability gap assessment commissioned by CBP in 2013 found that while standard operating procedures existed in some sectors, CBP did not have an accepted set of tactics, techniques, and procedures, such as best practices and tunnel activity indicators.³⁸ The ICE-led BEST Tunnel Task Forces also do not have documented standard operating procedures for addressing tunnels.

In studies, CBP and ICE have identified the absence of standard operating procedures as a challenge. For example, the CBP capability gap assessment found that DHS personnel located in different areas had inconsistent knowledge of the primary methods for addressing tunnels and that selected Border Patrol personnel conducting tunnel prediction operations may not have access to all pertinent information.

During the course of our audit work, we further found that establishing standard operating procedures could strengthen DHS's counter-tunnel efforts. Specifically, we found that not all officials addressing cross-border tunnels were aware of—and thus not accessing—all relevant DHS

³⁸Homeland Security Studies and Analysis Institute, *CBP Counter-Tunnel Threat Analysis: DOTMLPF+RGS Capability Assessment* (Falls Church, VA: June 25, 2013).

systems or offices with tunnel information. For example, ICE HSI officials we met with at one location were unaware of the existing TPMO or any national tunnel office. Further, TPMO, ICE HSI, and Border Patrol officials told us that standard operating procedures for tunnels could be beneficial. For example, ICE HSI and Border Patrol officials from three different sectors indicated a national-level office could help support counter-tunnel efforts by providing guidance, training, and strategic-level insight on tunnels. For instance, ICE HSI officials from one sector said it would be helpful to have guidance on detecting different types of tunnels and different investigative techniques for detecting tunnels used across sectors.

In recognition of these issues, both the CBP and ICE assessments recommended that DHS establish standard operating procedures for addressing tunnels in order to formalize methods and enhance information sharing for operational coordination. CBP accepted the CBP capability gap assessment's recommendation and tasked the TPMO with leading the effort to provide strategic-level guidance and direction for CBP counter-tunnel efforts. However, according to the Assistant Chief who leads the TPMO, it has not yet developed standard operating procedures due to lack of personnel and resources. According to the ICE HSI Unit Chief responsible for oversight and coordination of ICE tunnel investigations, no standard operating procedures could be drafted that would address the needs of specific locales due to the different operational areas. Additionally, both the TPMO and ICE HSI officials at the headquarters-level stated that establishing standard operating procedures is unnecessary because current coordination is effective and CBP and ICE have general memoranda of understanding from 2004 and 2006 that govern their coordination. While we recognize there are different types of tunnel threats in varying geographic environments and that CBP and ICE coordinate to address tunnels, counter-tunnel standard operating procedures could include best practices and procedures applicable to all sectors—such as procedures for reporting and accessing information on tunnels—as well as key differentiated information to account for the distinct operational areas. Further, CBP and ICE assessments have recommended establishing standard operating procedures for counter-tunnel efforts and the general CBP-ICE memoranda of understanding do not speak specifically to counter-tunnel coordination procedures.

Additionally, the DHS Office of the Inspector General (OIG) recommended in a 2012 report that DHS designate an authority to provide leadership, strategy and coordination of DHS counter-tunnel

efforts across DHS components.³⁹ The OIG identified the lack of a department-level focal point for tunnels as a concern and stated that it increased the risk of DHS not achieving its goal of disrupting criminal organizations that engage in cross-border smuggling. As an example, the DHS OIG reported that there were not sufficient policies or procedures in place to ensure that when acquiring tunnel detection technology, CBP would take into account ICE HSI investigative requirements, such as the need for covert use so as to not alert criminals to the presence of law enforcement. At the time, CBP and ICE stated they would designate a co-chaired committee to satisfy the recommendation. DHS approved this decision in February 2013. However, according to the TPMO, the co-chaired committee has never convened, nor has it had the need to take action. The ICE HSI Unit Chief responsible for tunnel coordination and oversight was unaware of the existence of the committee.

Convening this CBP-ICE committee to establish standard operating procedures could help provide strategic guidance that addresses the complexity of the threats posed by cross-border tunnels and ensure information is shared among the range of agencies involved. Once convened, this committee could also take the lead on other strategic counter-tunnel efforts, such as developing training. *Standards for Internal Control in the Federal Government* calls for agencies to implement control activities, such as policies, to help achieve objectives and ensure accountability for stewardship of government resources.⁴⁰ Additionally, these standards state that control activities should be documented in, for example, management directives, administrative policies, or operating manuals. Leadership is a key feature for successful interagency collaboration, and we have previously reported that it is often beneficial to designate one lead in order to centralize accountability and expedite decision making.⁴¹ We have also previously reported that establishing a focal point with sufficient time, responsibility, authority, and resources can help ensure successful implementation of complex interagency and

³⁹Department of Homeland Security, Office of Inspector General, *CBP's Strategy to Address Illicit Cross-Border Tunnels*, DHS OIG-12-132 (Washington, D.C.: Sept. 26, 2012).

⁴⁰[GAO/AIMD-00-21.3.1](#) and [GAO-14-704G](#).

⁴¹[GAO-12-1022](#).

intergovernmental undertakings.⁴² While developing standard operating procedures for detecting, identifying, and addressing cross-border tunnels may require some investment of resources, having such standardized procedures could reduce resource requirements over time by increasing the efficiency of counter-tunnel efforts by formalizing and enhancing information sharing and establishing protocols. Furthermore, according to the tunnel capability gap assessment, having standard operating procedures reduces the likelihood of gaps or conflict in roles and responsibilities among staff, and minimizes the likelihood that information and partnerships may be lost during personnel changes.

DHS Employs Various Technologies to Address Smuggling by Cross-Border Tunnels, Ultralight Aircraft, and the Selected Maritime Methods

DHS currently uses multiple existing technological solutions and is researching additional technologies to address smuggling by cross-border tunnels, ultralight aircraft, and the selected maritime methods.

Cross-border tunnels. DHS initiated a Cross-Border Tunnel Threat program to acquire tunnel detection technology in 2012 and is currently completing an analysis of alternatives to evaluate different technology options. CBP's preliminary concept of operations for tunnel detection technology states that detection capability is required in border environments that vary from urban, to coastal, to desert, to rugged, mountainous terrain. According to CBP officials, completion of the analysis of alternatives has been delayed as of November 2016 due to a number of reasons, including delays in obtaining security clearances for the contractor. CBP officials are currently determining new acquisition timeframes. In the meantime, DHS is leveraging multiple existing tunnel technologies.

DHS S&T is also in the process of developing additional technologies for predicting, detecting, tracking, and interdicting cross-border tunnels, but the projects are in the research and development phase. For example, DHS S&T is developing technology to determine how long ago a clandestine tunnel was built and infer the types of contraband and number of people that may have gone through the tunnel over that period

⁴²GAO, *Combating Terrorism: Selected Challenges and Related Recommendations*, [GAO-01-822](#) (Washington, D.C.: Sept. 20, 2001). See also GAO, *Combating Terrorism: Evaluation of Selected Characteristics in National Strategies Related to Terrorism*, [GAO-04-408T](#) (Washington, D.C.: Feb. 3, 2004); and GAO, *Biosurveillance: Efforts to Develop a National Biosurveillance Capability Need a National Strategy and a Designated Leader*, [GAO-10-645](#) (Washington, D.C.: June 30, 2010).

of time. Appendix II provides more details on potential tunnel technology projects being researched and developed.

Ultralight aircraft. AMO and Border Patrol are using existing radar and surveillance camera technology, including DOD and Federal Aviation Administration radars, the Tethered Aerostat Radar System, Remote Video Surveillance Systems, Integrated Fixed Towers, and Mobile Surveillance Capabilities, to detect and track ultralight aircraft.⁴³ The Tethered Aerostat Radar System has been helpful in detecting some ultralight incursions, according to AMO and Border Patrol officials we interviewed.

Maritime vessels. Coast Guard and AMO use both marine and aerial assets equipped with sensors, such as cameras and forward looking infrared radar, for surveillance and targeted interdictions of maritime vessels used for smuggling, including panga boats and recreational vessels. They also employ existing technologies, such as X-ray machines to identify hidden compartments of maritime vessels. Additionally, DHS leverages existing DOD maritime technology, such as a system called Minotaur, which integrates and processes sensor data from multiple sources for surveillance aircraft.

DHS S&T is in the process of developing additional technologies to be used for predicting, detecting, tracking, and interdicting illicit maritime vessels, but the technologies are not yet deployed. For example, DHS S&T is developing the Integrated Maritime Domain Enterprise and Coastal Surveillance System software to integrate multiple data systems and create new maritime security common operating data to share across DHS components. Appendix II provides more details on research and development technology projects.

⁴³The Tethered Aerostat Radar System is a helium-filled balloon moored to the ground, with elevated radar sensors to provide look-down capability. The Integrated Fixed Towers consists of, among other things, ground surveillance radars and surveillance cameras mounted on fixed (that is, stationary) towers. The Remote Video Surveillance System includes multiple color and infrared cameras mounted on monopoles, lattice towers, and buildings, but unlike the Integrated Fixed Towers, it does not include radars. The Mobile Surveillance Capabilities is a stand-alone, truck-mounted suite of radar and cameras that provides a display within the cab of the truck.

CBP Could Better Meet Operational Needs and Ensure Effective Use of Resources by Comprehensively Assessing Ultralight Technology Investments

CBP is considering various technological solutions to address ultralight aircraft, but does not have a plan to assess how the solutions will meet its operational needs. After Border Patrol identified ultralight aircraft incursions as a high priority threat, it requested assistance from CBP in September 2009 to identify a technology solution to aid in the detection and interdiction of ultralights. In response, CBP initiated the Ultralight Aircraft Detection acquisition program to acquire a technological solution. In 2011, CBP formalized the operational need for an Ultralight Aircraft Detection program in an Operational Needs Statement, in which it justified its need for the technology by referring the reader to capability gaps it had documented in a Mission Needs Statement for Small Dark Aircraft-Low Flying Aircraft Detection, an ongoing research and development project for technology to address the threats posed by ultralight aircraft and other low-flying aircraft.⁴⁴ CBP deployed a limited number of Ultralight Aircraft Detection systems to detect ultralight aircraft along both the southern and northern borders. In June 2015, CBP, in accordance with recommendations from AMO and Border Patrol, ceased operational use of the Ultralight Aircraft Detection systems.⁴⁵ CBP officials explained that a quick buy acquisition strategy and limited institutional technical knowledge contributed to poorly defined requirements and the acquisition of the Ultralight Aircraft Detection radar with limited capability.

In 2015, CBP began a technology demonstration to assess the ability of DOD's Lightweight Surveillance Target Acquisition Radar systems to aid in the detection of low-flying aircraft along the southwest border. Once again, CBP used the Small Dark Aircraft-Low Flying Aircraft Detection Mission Needs Statement to describe the operational needs that Lightweight Surveillance Target Acquisition Radar was intended to address. The three ultralight aircraft technological solutions are further described in Table 2.

⁴⁴A mission needs statement provides a high-level description of the operational requirements to address a current or impending capability gap. It outlines the concept of the solution to fill the gap and does not provide information on specific types of acquisitions that could provide that capability.

⁴⁵The contract for Ultralight Aircraft Detection remains active in order to identify potential ways to leverage the ten existing systems that have already been purchased in the maritime domain.

Table 2: U.S. Customs and Border Protection (CBP) Technological Solutions to Address Low-Flying Aircraft

Technology	Description	Status
Small Dark Aircraft (SDA) - Low Flying Aircraft Detection (LFAD)	In 2010, CBP and Department of Homeland Security (DHS) Science and Technology Directorate (S&T) sponsored the SDA project to serve as the research and development component of the LFAD acquisition program within CBP's Office of Acquisition.	DHS S&T completed its final system test in fall 2015. The SDA-LFAD demonstration is expected to be completed in March 2017, after additional CBP evaluation of operating and maintenance costs. LFAD could become a CBP acquisition program if Border Patrol and Air and Marine Operations determine the LFAD system meets its operational needs, according to CBP officials. Thus far, LFAD has received mixed customer reviews on its functionality.
Ultralight Aircraft Detection (ULAD)	In 2013, CBP awarded a \$100 million contract to acquire ULAD systems, with approximately \$8 million expended thus far. ^a	ULAD demonstrations have found that the technology provides limited capability to CBP components and falls short of meeting operational requirements. The system is not currently being pursued as a solution for detecting low flying aircraft.
Lightweight Surveillance Target Acquisition Radar (LSTAR)	In 2015, CBP modified excess Department of Defense 'Lightweight Counter Mortar Radar' systems into LSTARs and started testing the LSTARs to demonstrate the viability of the systems in tracking ultralight aircraft flying into the southwestern United States.	The LSTAR successfully detected and tracked aircraft in the first phase of the LSTAR demonstration and CBP is proceeding to the second demonstration phase, which consists of deploying 10-30 LSTAR systems along the Southwest border.

Source: GAO analysis of CBP documentation. | GAO-17-474

^aCBP initially awarded a contract to acquire ULAD systems in August 2012. However, because the contractor was unable to deliver a key capability—a communications sub-system to transmit information—CBP subsequently re-awarded the contract to another vendor.

Although CBP used the same mission needs statement for the three projects, CBP officials stated that CBP is demonstrating separate ultralight aircraft technological solutions to address different geographic areas. For example, CBP officials told us the Small Dark Aircraft-Low Flying Aircraft Detection technology demonstration is geared towards identifying a technical solution for addressing aerial smuggling on the northern border, which is more mountainous and remote, and the Ultralight Aircraft Detection program was meant to detect and track ultralight aircraft along the southern border, which has a relatively flatter terrain. While we recognize that there may need to be multiple technical solutions to address the threats posed by ultralight aircraft and account for operational differences, such as terrain and manpower, CBP has not assessed and documented how the technological solutions will fully address Border Patrol and AMO's operational needs to detect ultralight aircraft in all operational environments or how these solutions fit into the broader aerial domain awareness efforts. While the Ultralight Aircraft Detection program is no longer being pursued, there are a number of efforts that could be used to address ultralight aircraft smuggling. Both the

Small Dark Aircraft-Low Flying Aircraft Detection and Lightweight Surveillance Target Acquisition Radar are still being demonstrated and considered as potential solutions to acquire to address ultralight aircraft. Furthermore, DHS S&T plans to extend the Small Dark Aircraft-Low Flying Aircraft Detection project to the southern border to help detect and track low-flying aircraft. Additionally, CBP intends to replace or modernize the Tethered Aerostat Radar System and states in its acquisition documentation that it is seeking alternative capabilities to improve target detection of low flying aircraft, among other things. DHS has also identified small unmanned aerial systems as an emerging smuggling method and CBP is starting to look for technological solutions to address this new threat that potentially could also detect ultralight aircraft.⁴⁶

We have previously identified the need for agencies to evaluate alternatives by considering the costs and benefits of different measures and to document management's decisions and the rationale for the investment of resources.⁴⁷ Additionally, *Standards for Internal Control in the Federal Government* states that significant events—including decisions—need to be clearly documented, and the documentation should be readily available for examination.⁴⁸ There are multiple ongoing analytical efforts that CBP could leverage to analyze how the alternative technologies for detecting and tracking ultralight aircraft address operational needs in various environments and the associated costs and benefits. For example, AMO and John Hopkins University Applied Physics Laboratory are leading the development of a formal Capability Gap Assessment process to gather mission needs and elicit capability gaps in both the air and maritime domains from the field; AMO and CBP's Office of Acquisition are jointly developing a comprehensive capabilities analysis report for aerial domain awareness; and AMO and DHS S&T have a Value Focused Modeling project to estimate return on investment of AMOC's existing radars and sensor technologies. CBP officials acknowledged the benefit of analyzing alternatives and plan to analyze the costs and benefits of some alternatives (e.g., existing Tethered

⁴⁶According to DHS S&T, to help address the threat of nefarious small unmanned aerial systems, the DHS Undersecretary of Science and Technology recently established a Program Executive Office for Unmanned Aerial Systems in DHS S&T. This Executive Office is responsible for guiding, assessing, advising, and enabling technical solutions for using small unmanned aerial systems and for leading national efforts to counter small unmanned aerial system misuse in the United States.

⁴⁷[GAO-06-91](#).

⁴⁸[GAO/AIMD-00-21.3.1](#) and [GAO-14-704G](#).

Aerostat Radar Systems) as part of the process to determine whether or not to acquire the Small Dark Aircraft-Low Flying Aircraft Detection system. However, they did not say that this analysis would include all alternative approaches for addressing ultralight aircraft—such as modernized Tethered Aerostat Radar Systems, the Lightweight Surveillance Target Acquisition Radar, or any solutions DHS S&T is developing.

CBP could be better positioned to use its resources more effectively and ensure the technological solutions selected will fully meet operational needs prior to making investment decisions by assessing and documenting how the ongoing technology demonstrations and any other potential technological solutions for detecting and tracking ultralight aircraft will fully address operational needs. Documenting such assessments, consistent with standards for internal control, prior to making investment decisions would also enhance transparency by providing stakeholders visibility into rationales for investment decisions over time.

Establishing and Monitoring Performance Measures Could Allow DHS to Better Assess Effectiveness of Efforts to Address the Selected Smuggling Methods

DHS has established or is in the process of establishing high-level smuggling-related performance measures and DHS components collect data regarding the prevalence of cross-border tunnel, ultralight aircraft and selected maritime smuggling, but DHS has not assessed the effectiveness of its efforts specific to addressing these smuggling methods. With respect to high-level smuggling-related performance measures, DHS has, for example, established a performance measure through which it monitors and reports on the percentage of ICE's drug investigations resulting in the disruption or dismantlement of high-threat transnational drug trafficking organizations or individuals in its *Annual Performance Report*.⁴⁹ This performance measure includes data on any investigations in which smugglers leveraged cross-border tunnels, ultralight aircrafts, panga boats or recreational vessels, but does not separately assess investigative performance by these conveyances. Additionally, CBP AMO is in the process of developing high-level measures related to interdiction, investigation, and domain awareness. These high-level performance measures may include performance and capabilities relevant to ultralight aircraft incursions such as the amount of radar coverage for detecting a range of aerial threats within a given

⁴⁹Department of Homeland Security, *Annual Performance Report Fiscal Years 2014-2016* (Washington, D.C.: February 2015), 34.

volume of airspace along the southwest border but will not be specific to ultralight aircraft, according to these officials. Furthermore, DHS established performance measures through which Coast Guard reports on maritime migrant interdiction effectiveness and cocaine removal rates in the transit zone, but there is not a unified effort among all DHS components responsible for maritime security to jointly assess their performance to address panga boat and recreational vessel maritime smuggling at U.S. mainland borders.⁵⁰ Additionally, DHS components collect various data regarding the prevalence of cross-border tunnel, ultralight aircraft and selected maritime smuggling methods, but have not established performance measures and associated targets to assess the effectiveness of their efforts specific to addressing cross-border tunnels, ultralight aircraft, or non-traditional maritime threats, as described below.

- **Cross-border tunnels.** Border Patrol's TPMO tracks and reports DHS's official tunnel data such as the number, location, type, and dimensions of cross-border tunnels to Congress and plans to use this information in its new threat assessments tool discussed earlier in this report. Similarly, the ICE HSI Unit Chief responsible for tunnel coordination and oversight stated that ICE also collects data on cross-border tunnels. However, Border Patrol and ICE HSI have not used tunnel-related information to assess their collective performance to, for example, help identify effective approaches to discover tunnels, including technologies, investigative approaches, or patrols.
- **Ultralight aircraft.** CBP AMO collects various data regarding ultralight aircraft incursions, and has developed performance measures specific to its efforts to address ultralight aircraft, but these measures do not have targets that would allow it to gauge progress toward goals. Specifically, CBP AMO collects ultralight data regarding the number and location of suspected ultralight aircraft incursions, how the ultralight aircraft was detected (i.e., by technology such as ground or aerostat radars, or reported by an individual who heard or saw the ultralight aircraft activity), if a law enforcement response was coordinated, and if there was an arrest or seizure. AMOC uses these data to track certain performance measures specific to its efforts to address ultralight aircraft, such as the percent of detected ultralight aircraft incursions where AMOC coordinated a law enforcement

⁵⁰Department of Homeland Security, *Annual Performance Report Fiscal Years 2014-2016* (Washington, D.C.: February 2015), 26; and *Future Years Homeland Security Program Fiscal Years 2014- 2018, Appendix: Component Resources, Performance Plan, and Capital Investment* (Washington, D.C.: May 2013), 32.

response and the percent of ultralight incursions that resulted in a violation (e.g., an arrest or seizure). For example, in fiscal year 2015, AMOC reported that it coordinated a law enforcement response for 94 percent of the suspect ultralight aircraft incursions and that 32 percent of the suspect ultralight aircraft incursions resulted in a violation. However, AMO and Border Patrol have not assessed their performance against targets in order to determine if these rates represent a satisfactory level of performance, given the level of risk and investment.

- **Maritime vessels.** Coast Guard and the RECOMs collect data on drug and migrant interdiction by fiscal year and vessel type as well as the number of arrests and the outcome of the cases prosecuted. However, data collection efforts are not consistent across RECOMs and there are no established performance measures and targets, to monitor, for example, how maritime smuggling events are identified and detected, the number or percent of detected smuggling events that resulted in interdictions, or the number of interdictions that resulted in prosecutions.

DHS component officials provided a variety of reasons why they have not established and monitored performance measures and targets to assess effectiveness of DHS efforts to address cross-border tunnel, ultralight aircraft and selected maritime smuggling, such as limited resources, difficulty measuring unknown information, limitations of measures focused on specific smuggling methods, and difficulty of jointly establishing and monitoring performance among DHS components. For example, according to the Border Patrol TPMO Assistant Chief, the office has not established performance measures due to its previously discussed limited resources and the difficulty of fully measuring the effectiveness of counter tunnel efforts. In particular, Border Patrol officials told us that measuring the performance of activities which detect and deter threats to the United States where the universe of the total prevalence of smuggling is unknown—as with the case of cross-border tunnels—is difficult.⁵¹ Furthermore, ICE HSI and CBP AMO officials reported that performance

⁵¹For cross-border tunnels, in addition to our analysis, in 2013, a capability gap assessment commissioned by CBP found there were not performance standards or oversight processes for CBP counter-tunnel operations, primarily due to limited resources. As a result, the assessment recommended that CBP fully establish and resource the CBP Tunnel Program Office to assess performance, among other things. CBP has not implemented this recommendation. Homeland Security Studies and Analysis Institute, *CBP Counter-Tunnel Threat Analysis: DOTMLPF+RGS Capability Assessment* (Falls Church, VA: June 25, 2013).

measures which focus on a particular smuggling method or conveyance would not be the best measure of their efforts to combat smuggling. For example, AMO officials reported that higher-level measures linked to AMO's goals and objectives can better address the full range of smuggling methods. Additionally, CBP and ICE officials told us that jointly establishing and monitoring performance measures and targets is difficult due to the component's different missions. For example, a performance measure relevant to CBP, such as the number of miles of border under surveillance for tunnels, would not be relevant to ICE.

We recognize the challenges associated with resource constraints and establishing performance measures, as well as the value of higher level performance measures; however, agency resources are being invested to address cross-border tunnel, ultralight aircraft, and selected maritime smuggling methods and without some type of performance measurement, DHS does not have reasonable assurance that efforts to address these selected smuggling methods are effective. DHS already collects data on these selected smuggling threats that could be leveraged to mitigate the resources needed to measure performance. Additionally, DHS could leverage other DHS efforts as avenues to establish performance measures. For example, DHS could utilize the planned Maritime Security Coordination Working Group to establish performance measures and targets related to assessing the effectiveness of efforts to address panga boats and recreational vessels.⁵² Further, even if it is not possible to collect certain data, such as the full universe of cross-border tunnels, GAO, the Office of Management and Budget, and the Performance Improvement Council's Law Enforcement Measures Working Group—an interagency effort to address issues related to law enforcement performance measures chaired by the Office of Management and Budget—have previously reported that agencies can use proxy measures

⁵²According to an October 2016 DHS Office of Inspector General report, the DHS Under Secretary for Management will charter and lead a Maritime Security Coordination Working Group that includes key leaders from applicable DHS components. The working group will ensure DHS implements oversight mechanisms to coordinate AMO, Coast Guard, and ICE operations on a sustained basis. Additionally, the working group will review how the principles and goals outlined in the Maritime Operations Coordination Plan, together with suitable means of oversight, can be incorporated into recently established coordination forums at both the department and field levels. The estimated completion date for these efforts is December 2017. See Department of Homeland Security Office of Inspectors General, *AMO and Coast Guard Maritime Missions Are Not Duplicative, But Could Improve with Better Coordination*, OIG-17-03 (Washington, D.C.: October 2016).

to determine how well a program is functioning.⁵³ These proxy measures should be closely tied to the desired outcome—preventing smuggling through cross-border tunnels—and could include measures such as the percent of tunnels discovered prior to completion or the percent of tunnels discovered prior to being operational. In addition, by assessing the performance for each selected smuggling method, DHS could obtain valuable information on the relative risks posed by these smuggling methods as compared to other methods to capture the overall smuggling threat picture and better inform resource allocation decisions for addressing smuggling. Moreover, assessing performance information across components could help components determine cost-effective means for improving performance. For example, if CBP established and monitored performance measures related to subterranean domain awareness, both ICE HSI and Border Patrol could use this information to inform investigations and patrol operations.

Standards for Internal Control in the Federal Government states that regular monitoring is needed to assess the quality of performance over time, and information should be communicated to management to achieve its objectives and ensure any issues are resolved.⁵⁴ We have previously reported that performance measures are important management tools that can be used by individual programs or initiatives and that performance measures should have quantifiable, numerical targets or other measurable values to allow for easier comparison with actual performance.⁵⁵ Furthermore, interagency collaboration best practices call for federal agencies engaged in collaborative efforts to

⁵³GAO, *Overstay Enforcement: Additional Mechanisms for Collecting, Assessing, and Sharing Data Could Strengthen DHS's Efforts but Would Have Costs*, [GAO-11-411](#) (Washington, D.C.: Apr. 15, 2011); Office of Management and Budget, *Performance Measurement Challenges and Strategies* (June 18, 2003); and Performance Improvement Council, *Law Enforcement Measure Working Group* (December 2015). The Performance Improvement Council, an inter-agency body that supports cross-agency collaboration and best practice sharing, was established under Executive Order 13450 in 2007 and codified in law under the GPRA Modernization Act of 2010. See *Improving Government Program Performance*, Exec. Order No. 13450, 72 Fed. Reg. 64,519 (Nov. 2007); Pub. L. No. 111-352, § 9, 124 Stat. 3866, 3878-80 (2011) (codified at 31 U.S.C. § 1124). The Performance Improvement Council is chaired by the Deputy Director for Management of the Office of Management and Budget within the Executive Office of the President.

⁵⁴[GAO/AIMD-00-21.3.1](#) and [GAO-14-704G](#).

⁵⁵[GAO-03-143](#), 52; and GAO, *Veterans Justice Outreach Program: VA Could Improve Management by Establishing Performance Measures and Fully Assessing Risks*, [GAO-16-393](#) (Washington, D.C.: Apr. 28, 2016).

create the means to monitor and evaluate their efforts to enable them to identify areas for improvement.⁵⁶ By working together to establish performance measures and regularly monitor performance against targets, managers could obtain valuable information on successful approaches and areas that could be improved to help ensure that both technology investments and operational responses to address cross-border tunnel, ultralight aircraft, and selected maritime smuggling are effective.

Conclusions

As transnational criminal organizations have adapted their techniques to smuggle drugs and humans through cross-border tunnels, ultralight aircraft, panga boats, and recreational vessels to evade detection, it is vital that DHS respond accordingly in its border security enforcement efforts. DHS has taken steps to assess and address the risk posed by these smuggling methods, but opportunities exist to ensure these efforts are effective and that managers and stakeholders have information needed to make decisions. In particular, DHS would be better able to develop a more comprehensive picture of the threats posed by panga boats and recreational vessels across the nation and leverage its maritime threat assessments to make decisions by standardizing vessel definitions departmentwide in the DHS Lexicon for use in future threat assessments. Additionally, convening the CBP-ICE committee to establish standard operating procedures for addressing cross-border tunnels could help provide strategic guidance that addresses the complexity of the threats posed by cross-border tunnels and ensure information is shared among the range of agencies involved.

DHS has also invested in technology to help detect and track subterranean, aerial, and maritime smuggling, including various technologies to help detect and track ultralight aircraft; however, CBP has not assessed and documented how all of the alternative ultralight aircraft technical solutions being considered will fully address operational requirements or the costs and benefits associated with different approaches. This type of analysis could help better position CBP to use its resources more effectively and ensure that technology solutions selected will fully meet operational needs prior to making investment decisions. Furthermore, DHS has not assessed its performance in addressing any of the selected smuggling methods. By establishing performance measures and regularly monitoring performance against

⁵⁶[GAO-06-15](#).

targets, managers could obtain valuable information on successful approaches and areas that could be improved to help ensure that both technology investments and operational responses to address smuggling through cross-border tunnels, ultralight aircraft, panga boats, and recreational vessels are effective.

Recommendations for Executive Action

To help ensure that efforts to address smuggling through cross-border tunnels, ultralight aircraft, panga boats, and recreational vessels are effective and that managers and stakeholders have the information needed to make decisions, we recommend the Secretary of Homeland Security take the following six actions:

1. develop standardized, departmentwide definitions for maritime vessels used for smuggling in the DHS Lexicon;
2. direct the CBP-ICE tunnel committee to convene and establish standard operating procedures for addressing cross-border tunnels, including procedures for sharing information;
3. direct the Commissioner of CBP to assess and document how the alternative technological solutions being considered will fully meet operational needs related to ultralight aircraft;
4. direct the Commissioner of CBP and the Director of ICE to jointly establish and monitor performance measures and targets related to cross-border tunnels;
5. direct the Commissioner of CBP to establish and monitor performance targets related to ultralight aircraft; and
6. direct the Commandant of the Coast Guard, Commissioner of CBP, and the Director of ICE to establish and monitor RECOM performance measures and targets related to panga boat and recreational vessel smuggling.

Agency Comments and Our Evaluation

We provided a draft of this report to DHS and DOD for their review and comment. DHS provided written comments, which are summarized below and reproduced in full in appendix III, and DOD did not provide written comments. DHS concurred with four of the six recommendations in the report and described actions underway or planned to address them. DHS did not concur with two recommendations in the report. DHS also provided technical comments, which we incorporated as appropriate.

With regard to the first recommendation, that DHS develop definitions for maritime vessels used for smuggling in the DHS Lexicon, DHS concurred

and described planned actions to address the recommendation.

According to DHS, in March 2017, the DHS Lexicon Program created a terminology working group composed of Coast Guard, CBP, ICE, and other DHS maritime subject matter experts to address terminology and definition issues identified in our report. The terminology and definitions would then be published for use across the department. If implemented effectively, these actions should address the intent of the recommendation.

With regard to the second recommendation, that the CBP-ICE tunnel committee convene and establish standard operating procedures for addressing cross-border tunnels, DHS did not concur. DHS noted that there are memoranda of understanding between CBP and ICE outlining how they work together and share information as well as component-specific procedures in place at the local sector level that DHS believes constitute the procedures we recommended. In addition, DHS cited the establishment of multi-agency BEST Tunnel Task Forces in the areas at the highest risk for cross-border tunnel activity as helping to ensure collaboration and information sharing. However, CBP and ICE agreed that there may be benefits from strengthening existing operating procedures and stated that they plan to review, revise, and potentially consolidate procedures as they deem appropriate.

We continue to believe that establishing national-level, joint CBP-ICE standard operating procedures for addressing cross-border tunnels could help ensure that information is shared by CBP and ICE across all locations and minimize the likelihood that information and partnerships are lost during personnel changes. As discussed in this report, the memoranda of understanding between CBP and ICE do not speak specifically to counter-tunnel coordination procedures. Additionally, as we reported, both CBP and ICE have completed studies that identified the absence of standard operating procedures as a challenge and recommended the establishment of departmental standard operating procedures. During the course of our audit work, we further found that not all officials addressing cross-border tunnels were aware of relevant information systems or the TPMO, and ICE HSI and Border Patrol officials from three different sectors indicated additional guidance, training, and strategic-level insights would be helpful. While we agree that strengthening existing operating procedures could be helpful, not all sectors or relevant officials may benefit without the establishment of standard operating procedures that apply nationwide. For example, as noted in our report, the BEST Tunnel Task Forces do not currently have documented standard operating procedures for addressing tunnels.

Establishing departmental standard operating procedures for tunnels could help ensure that all relevant ICE and CBP officials have guidance on how to address tunnels.

With regard to the third recommendation, that CBP assess and document how alternative technological solutions being considered will fully meet operational needs related to ultralight aircraft, DHS concurred. DHS stated that AMO is developing a Capability Analysis Report, a Mission Need Statement, and a Concept of Operations for air domain awareness that will result in validated requirements for ultralight aircraft, among other threats. In addition, DHS stated that subsequent to these efforts, it will prepare operational requirements documents that will specify how technological solutions will meet the requirements. If implemented effectively, these actions should address the intent of the recommendation.

With regard to the fourth recommendation, that CBP and ICE jointly establish and monitor performance measures and targets related to cross-border tunnels, DHS concurred and stated that CBP and ICE will work together to harmonize performance data collection efforts and develop performance measures and targets. However, DHS stated that it would be premature to establish measures and targets prior to making tunnel detection technology acquisition and deployment decisions, and therefore will wait to develop them until it has addressed its technology challenges. We believe that DHS could benefit from establishing some performance measures and targets prior to making technology decisions. As discussed in this report, DHS initiated a program to acquire tunnel detection technology in 2012 and has an analysis of alternatives to evaluate different technology options underway, but this analysis has been delayed and CBP has not yet determined new time frames. Given that CBP has been working to acquire additional tunnel detection technology for several years and time frames for its acquisition have not been determined, we believe that establishing some measures and targets in the interim could help inform DHS's current efforts to address cross-border tunnels and provide insights relevant to its tunnel detection technology acquisition decisions. Once fully implemented, DHS's planned actions should address the intent of the recommendation.

With regard to the fifth recommendation, that CBP establish and monitor performance targets related to ultralight aircraft, DHS concurred and stated that CBP's AMO and Border Patrol are developing a joint performance measure and targets for interdicting ultralight aircraft. According to DHS, AMO and Border Patrol plan to document how the

measure will be defined and validate the data reporting process. If implemented effectively, these actions should address the intent of the recommendation.

With regard to the sixth recommendation, that Coast Guard, CBP, and ICE establish and monitor RECOM performance measures and targets related to panga boat and recreational vessel smuggling, DHS did not concur. DHS stated that it believes that by establishing common terminology to address our first recommendation, the RECOMs will have more reliable, usable analyses to inform their maritime interdiction efforts. However, it did not believe that performance measures and targets related to smuggling by panga boats would provide the most useful strategic assessment of operations to prevent all illicit trafficking, regardless of area of operations or mode of transportation. DHS also cited the recent creation of the DHS Office of Policy, Strategy, and Plans that is to work with Coast Guard, CBP, ICE, and other components and offices to better evaluate the effectiveness of all operations that work to prevent the illegal entry of goods and people into the country, as appropriate. Additionally, DHS stated that it will continue to work with the Office of National Drug Control Policy to create a set of enterprise-wide, strategic-level measures of performance for drug supply reduction activities. DHS requested that we consider this recommendation resolved and closed.

We continue to believe that by jointly establishing performance measures and targets related to panga boat and recreational vessel smuggling, Coast Guard, CBP, and ICE could track valuable performance information, such as how panga boat and recreational vessel smuggling events are identified and detected, or the percent of these detected smuggling events that result in interdictions, to help inform their collaborative efforts to address maritime smuggling. We agree that creating common terminology is a positive step; however, without performance measures or targets, DHS does not have reasonable assurance that its collaborative efforts and investments to counter cross-border smuggling by panga boats and recreational vessels are effective. Similarly, we recognize the value of high level strategic performance measures; however, these types of measures may not provide sufficiently detailed performance information to allow DHS to identify successful approaches to addressing smuggling by panga boats and recreational vessels and areas for improvement. Further, performance measures and targets related to panga boat and recreational vessel smuggling could, in turn, better position DHS to understand the overall smuggling threat

picture and better inform resource allocation decisions for addressing smuggling and drug supply reduction activities.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Homeland Security, the Secretary of the Defense, and other interested parties. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-8777 or gablerr@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix IV.



Rebecca Gambler
Director, Homeland Security and Justice

Appendix I: Objectives, Scope, and Methodology

This report addresses the following questions:

1. What do Department of Homeland Security (DHS) data show about the prevalence of smuggling by cross-border tunnel, ultralight aircraft, and selected maritime methods from fiscal years 2011 through 2016?
2. To what extent has DHS assessed the risks from smuggling by these methods?
3. How has DHS addressed smuggling by these methods?
4. To what extent has DHS assessed the results of its efforts to address smuggling by these methods?

To address these questions, we focused our review on smuggling across U.S. mainland borders, including coastal borders, and we selected the following smuggling methods: cross-border tunnels, ultralight aircraft, panga boats, recreational maritime vessels, and self-propelled semi-submersible and fully submersible vessels.¹ We selected these smuggling methods to include only those that would occur between ports of entry through means other than overland (given our focus on subterranean, aerial, and maritime smuggling); have been identified in strategy documents or by senior DHS officials and DHS officials with whom we met as a challenge or risk; and were of a magnitude that DHS had taken steps to address them. We analyzed DHS policies, procedures, reports, and data regarding the selected smuggling methods from fiscal years 2011 through 2016.² We also conducted site visits to San Diego, El Centro, and Riverside, California; Nogales and Yuma, Arizona; and Miami and Key West, Florida. During these visits, we observed DHS approaches to addressing the selected smuggling methods and interviewed cognizant officials from U.S. Coast Guard (Coast Guard); U.S. Immigration and Customs Enforcement (ICE) Homeland Security Investigations (HSI); and U.S. Customs and Border Protection's (CBP) U.S. Border Patrol (Border Patrol) and Air and Marine Operations (AMO) about their efforts. We

¹Given its focus on smuggling across U.S. mainland borders (i.e., borders of the contiguous United States), our review does not address smuggling in the transit zone—a 6 million square mile area that includes the eastern Pacific Ocean, the Gulf of Mexico, and the Caribbean Sea that is used to transport illicit drugs from South America to the United States. For additional information on DHS counterdrug efforts in the transit zone, see GAO, *Coast Guard: Resources Provided for Drug Interdiction Operations in the Transit Zone, Puerto Rico, and the U.S. Virgin Islands*, [GAO-14-527](#) (Washington, D.C.: June 16, 2014).

²We selected this time period to identify recent trends in known smuggling events by the selected methods.

selected these locations based upon a combination of factors, including the past detected use of the selected smuggling methods and the presence of coordinated DHS efforts to counter them in these areas. The information gathered from our site visits is not generalizable to other locations but provides insights into DHS's responses to these incursions and efforts to use risk and performance information to stop future smuggling incidents using these methods. Additionally, we interviewed headquarters officials from the Coast Guard; CBP's Border Patrol, AMO, and Office of Acquisition, the office responsible for CBP's acquisition of products and services; ICE HSI; and DHS's Science and Technology Directorate (S&T), the office responsible for leading research and development efforts across the department, to obtain information and perspectives on their efforts to assess and address threats posed by the selected smuggling methods.

To determine what DHS data show about the prevalence of smuggling by cross-border tunnel, ultralight aircraft, and the selected maritime methods, we obtained and analyzed DHS data from fiscal years 2011 through 2016. Due to the illicit nature of smuggling, there are limitations to identifying the total number of smuggling events. Therefore, in this report we discuss the number of known smuggling events such as the numbers of discovered cross-border tunnels and detected ultralight aircraft and maritime drug and migrant smuggling events. We assessed the reliability of these data by (1) performing electronic testing for obvious errors in accuracy and completeness, (2) reviewing existing information about the data and the systems that produced them, and (3) interviewing agency officials knowledgeable about the data. Additionally, where possible, we compared the data to similar data DHS previously reported in such products as a Congressional report on cross-border tunnels and an AMO management report that included data on aerial incursions.³ We found the data sufficiently reliable for the purposes of reporting trends in the selected smuggling methods from fiscal years 2011 through 2016.

To determine the extent to which DHS has assessed the risk from smuggling by cross-border tunnel, ultralight aircraft, and the selected maritime methods we analyzed Coast Guard, AMO, Border Patrol, and ICE HSI risk, threat, and intelligence assessments. We also reviewed CBP, DHS S&T, and Coast Guard documentation on capability gaps,

³Department of Homeland Security, *Cross-Border Tunnels and Border Tunnel Prevention Fiscal Year 2015 Report to Congress* (March 29, 2016); and Air and Marine Operations, Assistance Commissioner's Report (May 4, 2014).

such as capability assessments and requirements documents. We evaluated these efforts against GAO's risk management framework and leading practices for interagency collaboration.⁴

To determine how DHS has addressed smuggling by the selected methods, we analyzed DHS policies, procedures, training documents, and documentation on developing and acquiring new technology, such as project plans, mission needs statements, and concepts of operations. We also interviewed officials from Border Patrol, AMO, ICE HSI and Coast Guard to determine the extent to which they have established mechanisms to coordinate assets and operations related to smuggling by cross-border tunnels, ultralight aircraft, and the selected maritime conveyances, and associated challenges. Further, we met with Department of Defense (DOD) officials from the offices and organizations that have been involved in DHS efforts to address the selected smuggling methods to determine the extent to which DHS has coordinated with DOD to leverage any efforts or technologies.⁵ We assessed these efforts against GAO's leading practices for interagency collaboration and risk management framework.⁶

To examine the extent to which DHS has assessed the results of its efforts to address the selected smuggling methods, we analyzed DHS and component performance reports, threat assessments, and strategic planning documents to determine what measures are in place to track the

⁴GAO, *Risk Management: Further Refinements Needed to Assess Risks and Prioritize Protective Measures at Ports and Other Critical Infrastructure*, [GAO-06-91](#) (Washington, D.C.: Dec. 15, 2005); and *Managing for Results: Key Considerations for Implementing Interagency Collaborative Mechanisms*, [GAO-12-1022](#) (Washington, D.C.: Sept. 27, 2010). As discussed in [GAO-06-91](#), risk assessment addresses the process of evaluating threats—the probability that a specific type of incident will occur—and vulnerabilities—weaknesses that can be exploited—so that countermeasures might be instituted. Risk assessment can also include an assessment of the consequence of an event to help prioritize which assets or areas require greater protection; however, as consequences of smuggling can reasonably be expected to be similar among different methods of smuggling, our analysis focused on the threat and vulnerability aspects of risk assessment.

⁵These DOD offices and organizations included U.S. Northern Command, which oversees Joint Task Force North, the organization responsible for supporting federal counterdrug activities along the southwest border; and the U.S. Southern Command, which oversees the Joint Interagency Task Force South, the primary operations center and coordinator for detecting and monitoring suspected air and maritime drug trafficking in the Caribbean, Central America, and South America.

⁶[GAO-06-91](#) and [GAO-12-1022](#).

effectiveness of DHS's counter cross-border tunnel, ultralight aircraft, and maritime smuggling efforts. We also interviewed DHS officials to determine how they use performance information to inform decision making. We assessed DHS's performance monitoring efforts against Standards for *Internal Control in the Federal Government* and performance assessment best practices.⁷

We conducted this performance audit from November 2015 to May 2017 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

⁷GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: September 2014); *Results-Oriented Government: Practices That Can Help Enhance and Sustain Collaboration among Federal Agencies*, [GAO-06-15](#) (Washington, D.C.: Oct. 21, 2005); *Tax Administration: IRS Needs to Further Refine Its Tax Filing Season Performance Measures* [GAO-03-143](#) (Washington, D.C.: Nov. 22, 2002); and *Standards for Internal Control in the Federal Government*, [GAO/AIMD-00-21.3.1](#) (Washington, D.C.: November 1999).

Appendix II: DHS S&T Projects Related to Selected Subterranean, Aerial, and Maritime Smuggling Methods

A number of technology systems are being researched and developed by the Department of Homeland Security (DHS) Science and Technology Directorate (S&T) to address selected subterranean, aerial, and maritime smuggling threats. Below is an overview of these ongoing DHS S&T projects.

Table 3: Department of Homeland Security (DHS) Technology Research and Development Projects Related to Selected Subterranean, Aerial, and Maritime Smuggling Methods

Technology Project	Description	Status
Integrated Maritime Domain Enterprise (IMDE) / Coastal Surveillance System (CSS)	The IMDE/CSS project aims to identify and track small maritime vessels that may be engaged in illegal behavior. To better identify threats, IMDE/CSS integrates data feeds from existing sensors and multiple data systems to create new maritime security common operating data to share across DHS components. It then analyzes those data to provide law enforcement with real-time information, including vessel tracking.	Technical demonstrations are ongoing. An initial version of the system was installed in December 2012 for preliminary evaluation at the U.S. Customs and Border Protection (CBP) Air and Marine Operations Center (AMOC). Various technical demonstrations occurred between fiscal years 2015-2016, and more are planned for fiscal year 2017 including an operational demonstration.
Commercial Space-Based Technologies	Commercial space-based technologies would provide awareness of maritime threats and targets.	Operational Utility Assessment is ongoing as of January 2017, as DHS determines best practices for this developing technology.
Dark Vessel Detection (DVD)	The DVD project aims to increase radar and optical sensor capabilities in order to detect vessels of all sizes which are not currently tracked through the Automatic Identification System. ^a	The DVD project is scheduled to commence in fiscal year 2017.
Small Dark Aircraft (SDA)	The SDA project aims to improve early detection and tracking of small aircraft, including ultralights, increase the opportunity for interdiction, and enable CBP to more efficiently deploy government assets. SDA is the research and development component of the Low Flying Aircraft Detection System (LFAD) acquisition program. This project involved the testing and installation of an integrated suite of multi-modal pole-mounted sensors to provide real-time information on air domain threats.	The SDA project has reached completion and U.S. Border Patrol (Border Patrol) will determine if LFAD meets its operational needs, according to CBP officials. The DHS Science and Technology Directorate (S&T) began the SDA Project in fiscal year 2011 by identifying innovative technologies. Demonstrations and tests continued through fiscal year 2012 after which a long-duration test was done along the northern border. After the test the final developmental system was fully integrated with a high degree of autonomy, high performance, and reliability. The Phase II LFAD system test was conducted and completed in October 2015.
Small Dark Aircraft Detection – Southern Border	The Small Dark Aircraft Detection – Southern Border project aims to provide a technical basis for the detection, tracking, and classification of small, low observable aircraft in areas of complex terrain on the southern border.	This effort is in the initial planning stage and an extension of the SDA work on the northern border.

**Appendix II: DHS S&T Projects Related to
Selected Subterranean, Aerial, and Maritime
Smuggling Methods**

Tunnel Detection	The Tunnel Detection project aims to evaluate the performance of existing tunnel detection technologies in a variety of geophysical conditions in order to determine optimal sensor placement.	DHS S&T created and utilized a tunnel detection performance tool in order to optimize currently available equipment. Additional demonstrations were planned for the end of fiscal year 2016. A transition prototype and test report is scheduled for fiscal year 2018.
Tunnel Age	The Tunnel Age project aims to develop a solution for determining how long ago a clandestine tunnel was built, and infer the types of contraband and number of people that may have gone through the tunnel over that period of time.	DHS S&T has demonstrated the Tunnel Age Kit prototype for evaluation and plans to transition the kits to CBP and U.S. Immigration and Customs Enforcement (ICE).
Robots for Tunnel Investigations	The Robots for Tunnel Investigations project aims to allow for safe investigation of discovered tunnels without having to put humans into the tunnels. This project will determine if existing tunnel robotic technologies meet Border Patrol and ICE's needs or if improvements are needed.	The project is scheduled to commence in fiscal year 2017. DHS S&T plans to first conduct a study on available technology for robotics for tunnels and on current communication techniques in confined locations.

Source: GAO analysis of DHS S&T information | GAO-17-474

^aThe Maritime Transportation Security Act of 2002 mandated that certain commercial vessels—including self-propelled vessels 65 feet or more in length or that are certified to carry more than 150 passengers—operate an automatic identification system while in U.S. navigable waters, which allows these vessels to be tracked. The automatic identification system transmits vessel information such as the identity of the vessel, its position, speed, course, navigational status, and other safety-related information automatically to appropriately equipped shore stations, other ships, and aircraft, and receives such information from similarly fitted vessels, and exchanges data with shore-based facilities. See Pub. L. No. 107-295, tit. I, § 102(a), 116 Stat. 2064, 2082-83 (codified at 46 U.S.C. § 70114); see also 33 C.F.R. § 164.46.

Appendix III: Comments from Department of Homeland Security

U.S. Department of Homeland Security
Washington, DC 20528



**Homeland
Security**

April 17, 2017

Rebecca Gambler
Director, Homeland Security and Justice
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Re: Management's Response to Draft Report GAO-17-474, "BORDER SECURITY: Additional Actions Could Strengthen DHS Efforts to Address Subterranean, Aerial, and Maritime Smuggling"

Dear Ms. Gambler:

Thank you for the opportunity to review and comment on this draft report. The U.S. Department of Homeland Security (DHS) appreciates the U.S. Government Accountability Office's (GAO) work in planning and conducting its review and issuing this report.

The Department is pleased to note GAO's positive acknowledgment that DHS "has established various coordination mechanisms and invested in technology to address select smuggling methods in subterranean, aerial, and maritime domains." This has resulted in the interdiction of "millions of pounds of drugs and hundreds of thousands of individuals attempting to illegally enter the United States," and other benefits. For example, the report highlights that the number of known smuggling events involving these methods generally declined from Fiscal Year 2011 through 2016, which is indicative of success at countering these threats but also recognizes that the threats remain.

The report accurately addresses the agile and adaptive nature of the smuggling threat. Criminals, terrorist networks, and other malicious actors constantly seek illegal methods to enter the United States via air, water, or land. Transnational criminal organizations invest in research and development and human capital to leverage emerging opportunities. As the U.S. Customs and Border Protection (CBP), United States Coast Guard (USCG), and other DHS components deploy resources in one area, smugglers respond by moving their efforts to other locations or refining their tactics.

The Department remains committed to countering all illicit smuggling efforts, "non-traditional" or otherwise, and will continue to work alongside our federal, state, local, and international partners to develop technologies and operational procedures that will disrupt the flow of illegal goods and persons into the United States.

The draft report contained six recommendations with which the Department concurs with four and non-concurs with two. Attached find our detailed response to each of the recommendations.

Again, thank you for the opportunity to review and comment on this draft report. Technical comments were previously provided under separate cover. Please feel free to contact me if you have any questions. We look forward to working with you in the future.

Sincerely,



JIM H. CRUMPACKER, CIA, CFE
Director
Departmental GAO-OIG Liaison Office

Attachment

**Attachment: DHS Management Response to Recommendations
Contained in GAO-17-474**

GAO recommended that the Secretary of Homeland Security:

Recommendation 1: Develop standardized, department-wide definitions for maritime vessels used for smuggling in the DHS Lexicon.

Response: Concur. The DHS Lexicon Program, within the DHS Management Directorate (MGMT), was created in 2005 to serve as the official DHS source for terminology and definitions across the Department and the homeland security community. On March 3, 2017, the program manager convened a working group of nine subject matter experts across the USCG, CBP, U.S. Immigration and Customs Enforcement (ICE), and other DHS Component maritime vessel subject matter experts to address all terminology and definition issues identified in this report through a terminology working group. Specifically, all maritime vessel terminology and definitions will be gathered, harmonized, reviewed and cleared by stakeholders and leadership, as appropriate, and then published for use across the Department. The working group has established bi-weekly meetings to ensure the project remains on schedule. Estimated Completion Date (ECD): July 31, 2017.

Recommendation 2: Direct the CBP-ICE tunnel committee to convene and establish standard operating procedures for addressing cross-border tunnels, including procedures for sharing information.

Response: Non-Concur. DHS agrees that effective standard operating procedures for addressing cross-border tunnel enforcement activities and operations, especially as regards sharing information between CBP and ICE, are needed and believes that such procedures already exist. Specifically, Component-specific procedures—developed in consideration of the very different missions (i.e., interdiction versus investigation) that the Border Patrol and ICE have—are in place at the local Sector levels across the country. The Border Patrol and ICE work very closely on a daily basis using these procedures to address cross-border tunnel concerns based on the unique geographical locations and terrain within each area of responsibility.

In addition, the CBP and ICE have Memorandums of Understanding (MOUs) that outline how they work together and share information. These MOUs serve as the foundation for the effective partnership—particularly between the Border Patrol and Homeland Security Investigations (HSI)—that has existed for more than 10 years. Throughout the years, sector Chief Patrol Agents and their HSI counterparts have established, sustained, and grown these partnerships in accordance with the unique mission requirements of their areas of responsibility.

CBP and ICE have also implemented the requirements of Public Law 112-205, “Jaime Zapata Border Enforcement Security Task Force Act,” in part, through the creation of Border Enforcement Security Task Force (BEST) units which are multi-agency teams that increase information-sharing and collaboration among the participating law enforcement agencies. The areas at the highest risk for cross-border tunneling activity have BEST units with associated

Tunnel Task Forces that include Border Patrol and ICE agents assigned together with other law enforcement personnel to help ensure effective collaboration and information sharing, which occurs on a daily basis.

CBP and ICE, however, agree that additional operational benefits may exist if operating procedures can be strengthened. CBP and ICE will jointly review their procedures and discuss enhancement possibilities, revising and/or consolidating the procedures as deemed appropriate. ECD: January 31, 2018.

Recommendation 3: Direct the Commissioner of CBP to assess and document how the alternative technological solutions being considered will fully meet operational needs related to ultralight aircraft.

Response: Concur. The Trade Facilitation and Trade Enforcement Act of 2015 (P.L. 114-125) assigns CBP’s Air and Marine Operations (AMO) the responsibility to “manage the air and maritime domain awareness of the Department, as directed by the Secretary.” To that end, AMO is pursuing efforts to improve DHS air and maritime domain awareness capabilities. AMO has begun development of a Capability Analysis Report (CAR) for air domain awareness. In alignment with the Joint Requirements Integration and Management System, the CAR will be followed by a Mission Need Statement and Concept of Operations. These documents will result in validated requirements for the air domain, which will include ultralight aircraft among the threats. Subsequently, operational requirements documents will address how the technological solutions meet these requirements. AMO intends to achieve these milestones as follows:

- | | |
|--------------------------------------|----------------|
| • Capability Analysis Report | September 2017 |
| • Mission Need Statement | November 2017 |
| • Concept of Operations | February 2018 |
| • Operational Requirements Documents | June 2018 |

ECD: June 30, 2018.

Recommendation 4: Direct the Commissioner of CBP and the Director of ICE to jointly establish and monitor performance measures and targets related to cross-border tunnels.

Response: Concur. DHS agrees that having performance measures and targets related to cross-border tunnels may be value-added; however, it is premature for CBP and ICE to establish such measures and targets as this time. Specifically, the Border Patrol is in the process of identifying and evaluating tunnel detection technologies and making related acquisition and deployment decisions that would be best suited for its operational environments and mission requirements. In addition, the data that Border Patrol collects and analyzes is based on CBP’s interdiction mission (i.e. discovery date, tunnel classification, location, length, and width) which is different than the information used by ICE to support its investigative efforts. CBP and ICE will work together to identify and harmonize any commonalities in the type of data of most value in measuring the performance of their respective missions. Once CBP has had an opportunity to address its tunnel detection technology challenges, CBP and ICE will review available

information and develop performance measures and targets (Component-specific or joint), as deemed appropriate. ECD: January 31, 2018.

Recommendation 5: Direct the Commissioner of CBP to establish and monitor performance targets related to ultralight aircraft.

Response: Concur. In alignment with the development of Joint Requirements Integration and Management System documents for air domain awareness, CBP's AMO and Border Patrol are developing a joint performance measure and targets for interdicting ultralight aircraft. Measuring the ability to successfully interdict the contraband of an ultralight aircraft is an appropriate outcome measure of CBP's effectiveness at combating this threat. In concert with CBP practices, AMO and Border Patrol will complete a performance measure definition form and validate the data reporting process. ECD: September 30, 2017.

Recommendation 6: Direct the Commandant of the Coast Guard, Commissioner of CBP, and the Director of ICE to establish and monitor RECOM performance measures and targets related to panga boat and recreational vessel smuggling.

Response: Non-Concur. The Department agrees that having consistent and compatible tactical data related to the use of panga boats and recreational vessels by smugglers across the applicable RECOMs is prudent, and the standardization of terminology for these water craft (see Recommendation #1) will be the first step in establishing more reliable, usable analyses of the information for all operational units involved in the day-to-day interdiction of illicit smuggling in the maritime domain, including DHS's Joint Task Forces and the Joint-Interagency Task Force – South. That said, focusing on performance measures and targets related to smuggling via panga boats does not begin to address the much larger, dynamic and adaptive nature of smuggling operations and would fall short of providing a holistic, strategic assessment of operations to prevent all illicit trafficking, regardless of the tactical area of operations or the mode of transportation used by criminals, terrorists, and others.

The newly created DHS Office of Policy, Strategy, and Plans has been charged by Congress to develop and coordinate policies that promote and ensure quality, consistency, and integration for the programs, Components, offices, and activities across the Department. This office will work closely with the USCG, CBP, ICE and other Components and offices, including the DHS Maritime Security Coordination Working Group and DHS Office of the Chief Financial Officer's Program Analysis and Evaluation staff, to better evaluate the effectiveness of all operations that work to prevent the illegal entry of goods and people into the country, as appropriate. Additionally, the Department will continue to collaborate with the Office of National Drug Control Policy in the development of the Supply Reduction Strategic Outcome Framework. This framework will facilitate the creation of a set of enterprise-wide, strategic-level measures of performance for drug supply reduction activities and efforts on outcomes, and are more appropriate for measurement of Department and Component headquarters effectiveness.

We request that GAO consider this recommendation resolved and closed.

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

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Staff Acknowledgments

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