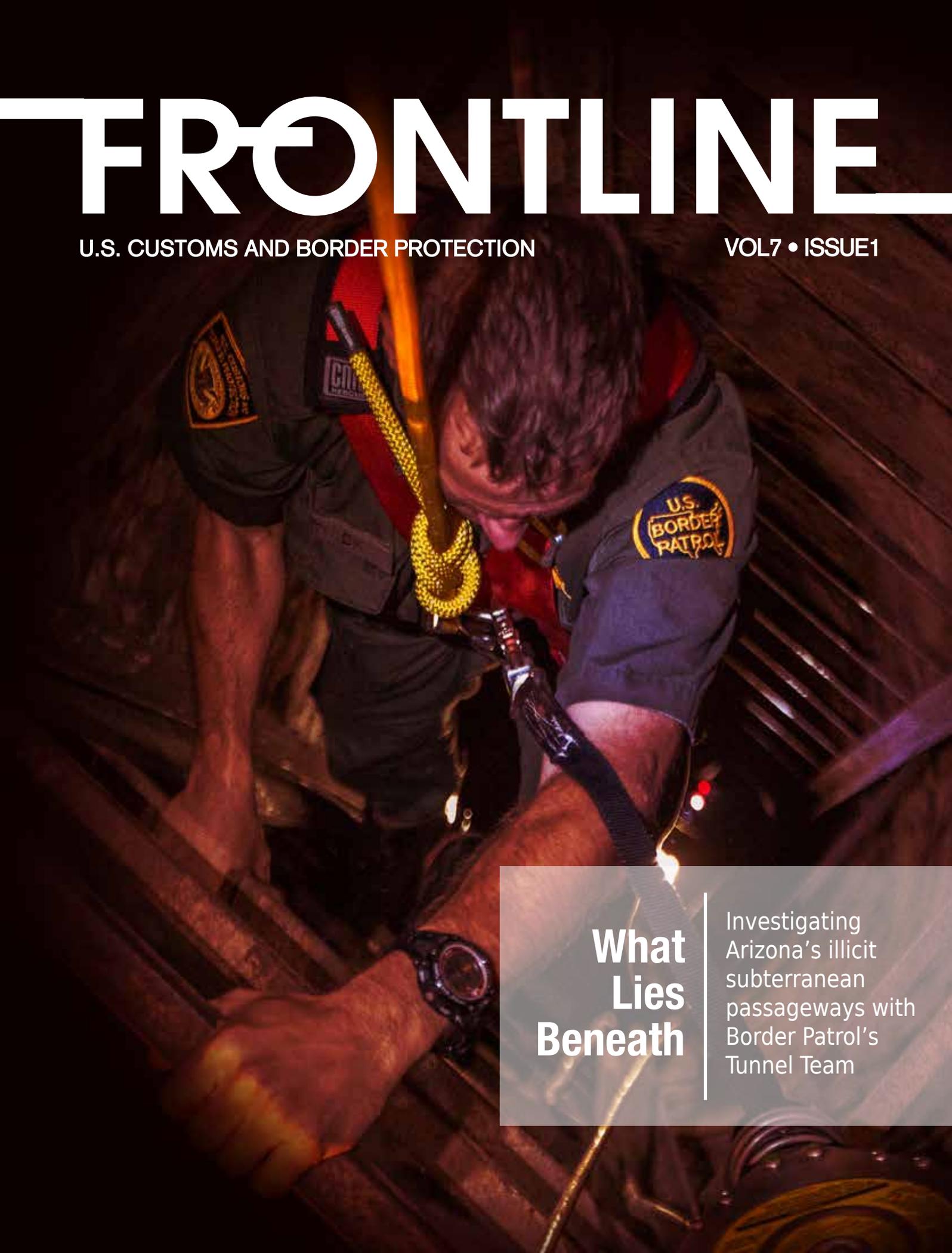


FRONTLINE

U.S. CUSTOMS AND BORDER PROTECTION

VOL7 • ISSUE1



**What
Lies
Beneath**

Investigating
Arizona's illicit
subterranean
passageways with
Border Patrol's
Tunnel Team



U.S. Customs and Border Protection



**A Border Patrol agent patrols the frozen St. Lawrence River.
Photo by James Tourtellotte**

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STOP AND THINK!



Visit www.CBP.gov for agricultural requirements before your trip!

For more information you may also visit the APHIS Plant Protection and Quarantine website at www.aphis.usda.gov/ppq.

WE UNDERSTAND WHY YOU MAY WANT TO BRING A BIT OF BEAUTIFUL MEXICO TO THE UNITED STATES, BUT BE AWARE THAT THERE ARE CERTAIN ITEMS YOU CANNOT BRING ACROSS THE BORDER. SO BEFORE YOU TRAVEL, VISIT THE U.S. CUSTOMS AND BORDER PROTECTION'S WEBSITE FOR MORE INFORMATION ABOUT AGRICULTURAL REQUIREMENTS.

CAUTION:

**YOU MUST DECLARE
ALL MEATS, FRUITS,
VEGETABLES, PLANTS,
SOIL OR ANIMAL OR
PLANT MATERIAL
PRODUCTS.**



CBP

Welcome Back



Welcome to the relaunch of the print edition of U.S. Customs and Border Protection's Frontline magazine.

Since 2008, Frontline has told CBP's story in an informative, in-depth and engaging way. It's a story with 60,000 potential narratives, each one reflecting the dedication and commitment that CBP employees bring to their work.

Last year, the magazine went digital with high-resolution videos and photos. This allowed for a richer and more engaging means of showcasing CBP's diverse responsibilities for securing our borders and facilitating lawful trade and travel.

Frontline stopped appearing on paper more than two years ago, but many employees and stakeholders have told me how much they miss the print magazine edition. With that feedback, we are resuming the publication of a redesigned print version of Frontline in conjunction with our digital edition. I think you will agree that the redesigned Frontline invites readers to experience CBP in a deeper and more meaningful way by illustrating the challenges and realities the men and women of Customs and Border Protection confront every day and their sacrifices to protect and serve the American people.

Those realities and challenges – and the sacrifices our employees make – deserve to be told to the widest possible audience through a variety of formats, so I am pleased to say “Welcome back” to Frontline magazine.

R. Gil Kerlikowske • Commissioner

FRONTLINE

VOL7 • ISSUE1

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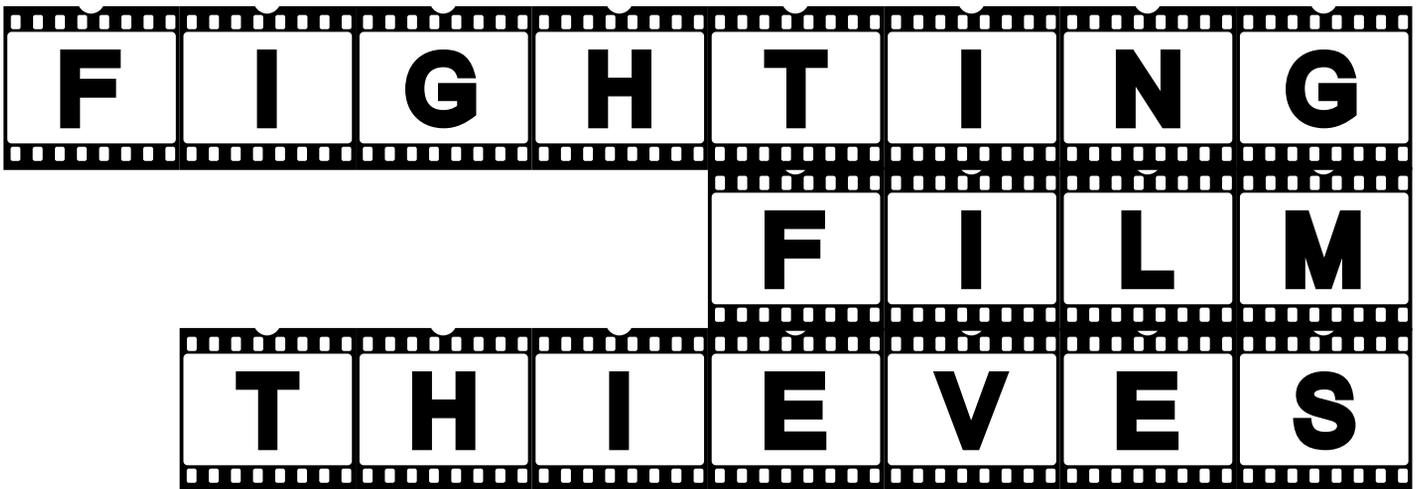
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**FIGHTING
FILM
THIEVES**

By Marcy Mason

It was the summer of 2012 and Theo Fletcher, a U.S. Customs and Border Protection international trade specialist on the West Coast, was poring through data from thousands of customs seizures of counterfeit goods at the U.S. ports. Fletcher, who asked to have his name changed in this article for personal safety, flagged something suspicious. He saw a high concentration of seizures of DVDs in a small city in the Pacific Northwest. Then, he noticed similar patterns in other cities in a neighboring state.

“I suspected that there was a relationship between these seizures,” said Fletcher. “I noticed commonalities in the types of descriptions used on the shipping documents, the commercial quantities of the products, and the parties involved overseas.” That led Fletcher to conduct additional research to try to associate the different importers and shipping addresses. “I wanted to see if there could be a conspiracy or a counterfeiting ring,” he said.

The Motion Picture Association of America, MPAA, was beginning to conduct its own investigation. One of the association’s members, a major film studio, had received notices from CBP, alerting them that pirated knockoffs of their films had been seized at the border. The MPAA, a trade association

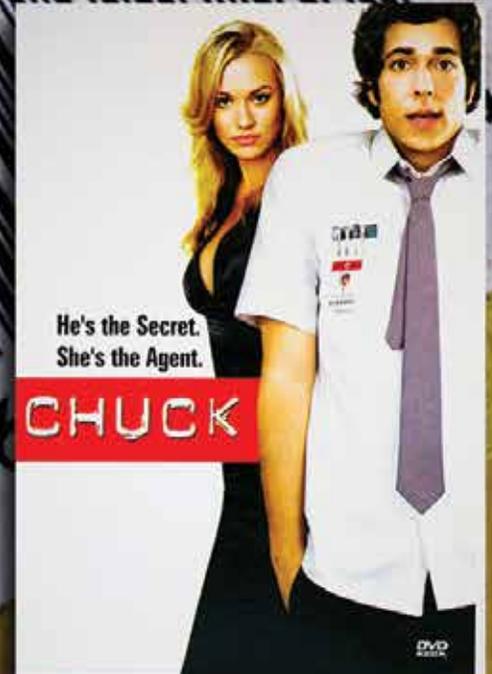
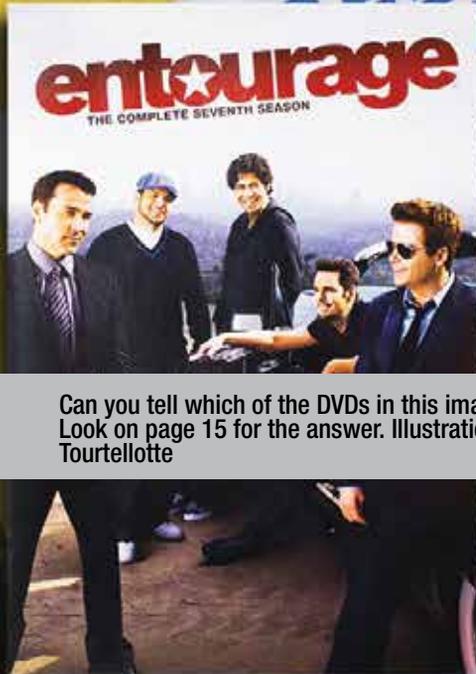
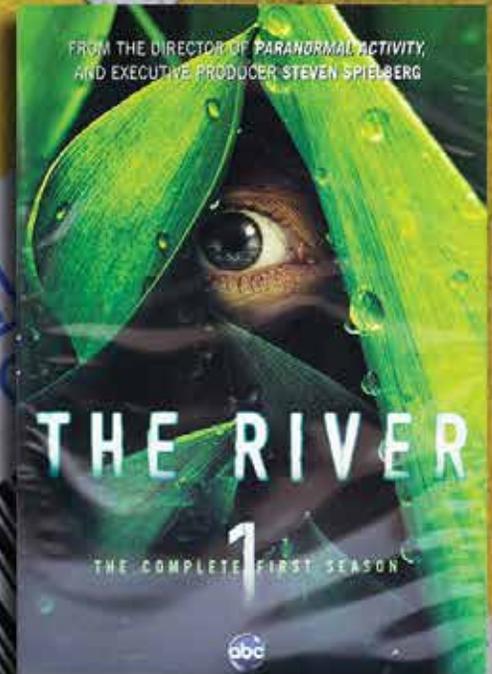
that represents six of the major Hollywood studios, asked Fletcher for help.

Fletcher, in turn, reached out to the Department of Homeland Security’s investigative arm – Homeland Security Investigations or HSI. “I realized that there’s a certain segment of importers that are knowingly importing counterfeit goods to finance lucrative businesses,” he said. “To stop them, it requires criminal investigation, indictments, convictions, jail time and the seizure of assets to put the counterfeiters out of business.”

Within months, through the use of different databases, Fletcher and HSI special agents confirmed that a network of individuals was involved in a sophisticated film piracy operation. One of the importers had set up nearly 20 companies, using multiple names and identities. “We’re looking at a moving target. The criminals are always trying to be one step ahead of us,” said Fletcher. “They use methods and strategies such as setting up different businesses and business fronts, which make them suspect for money laundering.”

Fletcher worked with HSI to identify other rights holders who were potential victims. HSI reached out to several other federal law enforcement

HOW CBP WORKS WITH OTHERS TO PREVENT MOTION PICTURE AND TELEVISION PIRACY



Can you tell which of the DVDs in this image are counterfeit? Look on page 15 for the answer. Illustration by James Tourtellotte

agencies for assistance. Their joint efforts culminated in the successful execution of federal search warrants in multiple locations. While the case is still pending, it underscores how a team approach is critical in fighting motion picture and television show piracy crimes.

Age-Old Problem

Piracy, the unauthorized reproduction or use of motion pictures, television programs or any other type of creative content, is not a new concept. The film industry has been plagued by piracy from its beginnings. However, Hollywood was hit especially hard when VCRs, videocassettes, and camcorders came on the market. The technology enabled people to duplicate content without payment, which led to financial losses for the industry, and illegal film distribution became rampant.

As technology has improved, the ability to steal products has become more and more sophisticated. “Today, we see criminal businesses that are established specifically to steal and upload pre-released or unauthorized content such as movies before they are released to DVD, while they’re still in the theaters or sometimes even pre-released,”

said Lev Kubiak, the director of the National Intellectual Property Rights Coordination Center, a multi-agency task force managed by U.S. Immigration and Customs Enforcement/HSI in Arlington, Virginia.

“Today, we see criminal businesses that are established specifically to steal and upload pre-released or unauthorized content such as movies before they are released to DVD, while they’re still in the theaters or sometimes even pre-released.”

Lev Kubiak, director of the National Intellectual Property Rights Coordination Center

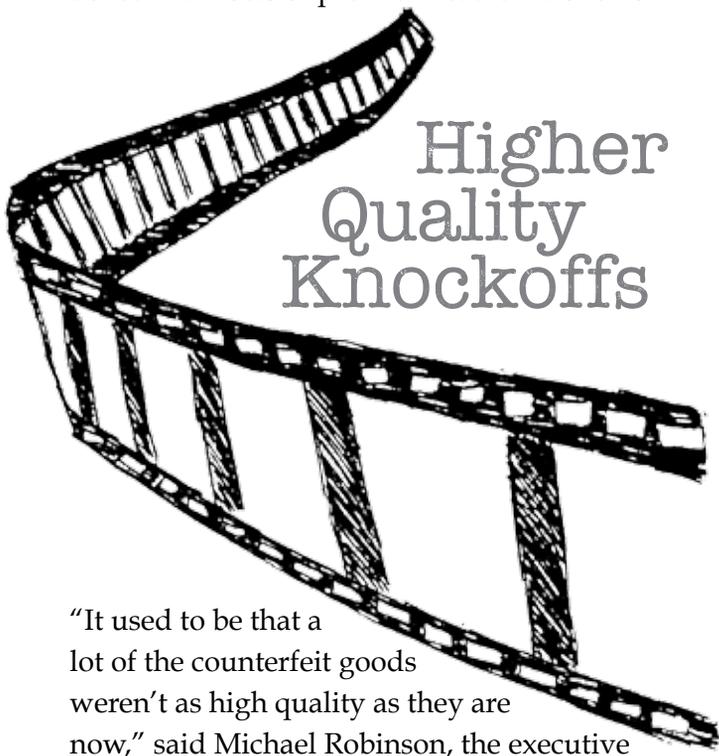
“Traditionally, movies were illegally copied here in the United States. Someone would press discs or produce fake cover art for the films and then sell them on the street corner. But now, very little production is done in the United States. Most counterfeits are illegally produced in China,” said Kubiak. “During fiscal year 2013, CBP and HSI seized \$1.7 billion worth of counterfeit goods; the vast majority was confiscated by CBP at the ports of

The quality of counterfeit goods is so high, it’s often difficult to distinguish genuine from fake. Disney movies are among the most popularly infringed films. The legitimate Disney film is on the right. Illustration by James Tourtellotte



entry. Ninety-two percent of that we believe came directly or indirectly from China," he said.

A substantial number of those goods fell into the category of optical media, which includes creative content such as movies, TV shows, video games or music in a format that is read through an optical ray on DVD, CD and Blu-ray disc equipment. During the last five years, optical media has been in the top-10 ranking of goods seized by the Department of Homeland Security for infringements on trademarks and copyrights. The largest number of seizures, 49 percent, were major motion pictures or boxed DVD sets of premium cable TV shows.



Higher Quality Knockoffs

"It used to be that a lot of the counterfeit goods weren't as high quality as they are now," said Michael Robinson, the executive vice president of global content protection for the MPAA. "The spelling on the packaging would be wrong or a Disney movie would have a Warner Bros. logo on it, so it was pretty easy to tell the genuine from the fake. But now, we're facing the same problem that a lot of rights holders have. The counterfeits are exact copies of the originals with no misspellings, so it's hard to tell just from looking at them."

According to Robinson, the majority of movies are pirated in theaters. "It happens when somebody

goes into a theater with a recording device and records it off the screen," he said. To protect movies, Robinson says the association's studio members watermark their films. "If a camcording theft occurs anywhere in the world, we're able to identify the theater where the movie was shown," he said. "The watermark is a fingerprint embedded in the film. We work with law enforcement authorities around the globe to identify and interdict that activity to put a stop to it."

"Most illegal camcording occurs in Eastern Europe," said Kubiak. "The illegal copy is then uploaded on the Internet and distributed globally through streaming or downloaded from illegal



websites," he said. "These websites don't charge a fee. They make their money through advertising – the higher the popularity of the website, the higher the ad revenue," explained Kubiak. "So the bad guys who are pirating these films make their money by stealing Paramount's newest movie, giving it away for free on their website, and then profiting from the website's advertising," he said. "Websites like these become very, very popular and can make millions or hundreds of millions of dollars a year."

Another way that content is often stolen is during the legitimate manufacture of DVDs. "Some weeks prior to the legitimate release date of the DVD

version of a film, when the public can go into a store in the U.S. and buy it off the shelf, the DVD has to be produced and shipped," said Robinson. "There's a whole supply chain process. Somewhere during that process, one of those DVDs could be stolen," he said. "And it just takes one. After that DVD is stolen, it can be shipped or uploaded on the Internet and delivered to anyone."

Deep Economic Loss

While many see piracy of movies and television shows as harmless, it's not. The economic loss to the U.S. is staggering. According to a report issued by the U.S. Department of Commerce in March 2012, "Intellectual Property and the U.S. Economy: Industries in Focus," intellectual property-intensive industries support at least 40 million jobs and contribute more than \$5 trillion to the U.S. gross domestic product. "When foreign countries steal that intellectual property or duplicate it illegally, they're undermining the security of the U.S. and its economy," said Kubiak.

The victims are numerous too. "What a lot of people fail to understand is that this is not a victimless crime. There are directly or indirectly 2 million people in the United States from various backgrounds who work for the film industry, and we support more than 100,000 businesses in all 50 states," said Robinson. "It's not just the big-name stars you see walking across the red carpet. It affects carpenters who are building sets, seamstresses who are sewing costumes, truck drivers, lighting experts, sound engineers, everything that you can imagine. It's a huge industry and it takes a lot of people to produce films."

Robinson also noted that the motion picture industry pays more than \$16 billion in state and federal income taxes each year. "People look at it as entertainment. They don't necessarily look at it the same way as they do other manufacturing jobs. But

it's just as important to the U.S. economy. We're one of the industries that has a positive trade surplus around the world. We export more content than we import. So it's a huge driver for the U.S. economy, and therefore, warrants protection."

Piracy also has a chilling effect on independent film producers. Case in point is what happened to Ellen Seidler, a Harvard-educated filmmaker, journalist and journalism teacher, who, in 2006, decided to make a feature movie with her directing partner, Megan Siler, a UCLA film school grad. The two put up \$250,000 of their own money to make their film, "And Then Came Lola," thinking they would at least be able to break even. "I took out a second-mortgage, borrowed against my retirement, and went into credit card debt," said Seidler, who is still paying off the debts she incurred during the film's production.

At first, the film showed promise. In 2009, it debuted in front of a sold-out crowd at the Frameline Festival, a premier film event in San Francisco. Other festivals followed, but then within 24 hours of the film's release on DVD, Seidler began seeing links to pirated copies on the Web. The download links were rapidly propagating and popping up everywhere. After a couple of months, the filmmakers had found more than 56,000 pirated copies and stopped counting. Seidler found the film on websites in a number of languages including Arabic, Russian, Turkish, Chinese, Spanish, Swedish and Czech.

Seidler tried to fight back. "Initially, when I found illegal copies, I tried to have them removed," she said. But her efforts were futile. "You take one down and 10 more pop up."

But what really infuriated the filmmaker was when she noticed corporate ads on the illegal sites that featured her film. "What I quickly discovered was that other people were making money off of the theft of my film, including a number of legitimate companies," said Seidler.

“What I quickly discovered was that other people were making money off of the theft of my film, including a number of legitimate companies. It didn’t seem right to me, so I created my first blog to document the connection between piracy and profits, and to show how mainstream companies were profiting from this black market.”

Ellen Seidler, filmmaker, journalist and journalism teacher

“It didn’t seem right to me, so I created my first blog to document the connection between piracy and profits, and to show how mainstream companies were profiting from this black market.” Seidler, who wants to educate others, has continued to write about piracy. “This is not just about something that happened to our film. This is the scenario that happens pretty much with every film.”

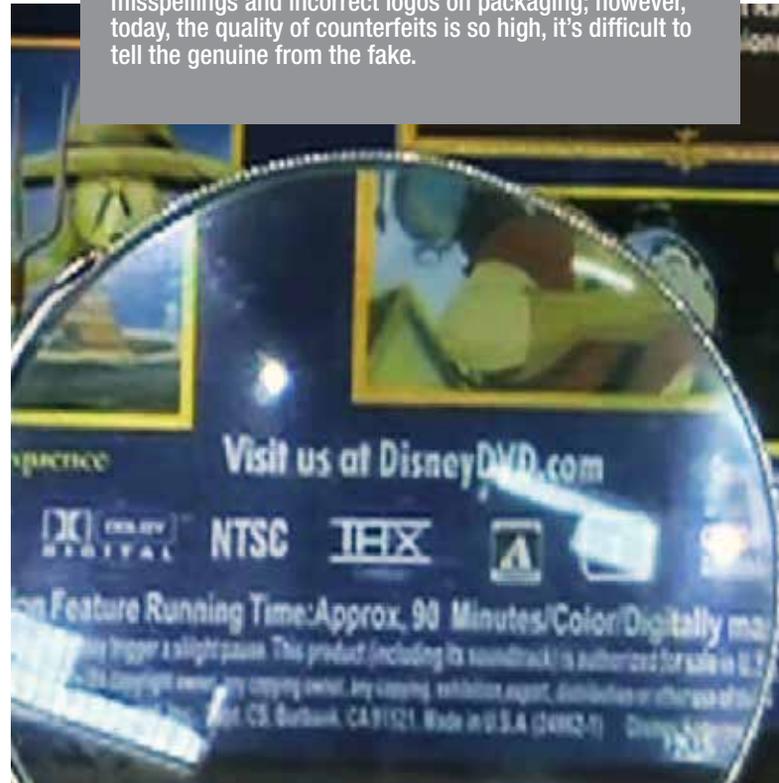
Motivating Factors

Film piracy is fueled by a number of factors. One of the key motivators is when movies and television shows are not released at the same time in different geographical territories. The time lag spurs viewers to watch pirated content because they don’t want to wait. One of the most publicized instances occurred in April 2013, when the piracy rate of HBO’s fantasy series, “Game of Thrones,” reached such epic proportions in Australia that U.S. Ambassador Jeffrey Bleich made a plea to Australians to stop watching pirated episodes. In 2012, 2013, and 2014, “Game of Thrones” was ranked the No. 1 pirated television show by TorrentFreak, a file-sharing news site.

Pirating films is also a good source of money. “On average, it costs a hundred million dollars to make a film and bring it to market,” said Robinson. “If all

you need to do is steal the film off the screen and remarket it, you don’t have all of the expense that goes into the production.”

In the past, counterfeit DVDs could easily be detected from misspellings and incorrect logos on packaging; however, today, the quality of counterfeits is so high, it’s difficult to tell the genuine from the fake.



It’s also a matter of perception. Many people don’t perceive piracy as a crime. “The public doesn’t seem to have a problem with piracy because they have this naive view that if something is on the Internet, it’s there for the taking,” said Seidler. “Companies like Google help perpetuate this because links to pirated sites are typically at the top of their search results. People think that if they find it on Google, it must be okay.”

But sometimes people aren’t aware that they’re buying pirated items. “Some of these sites look so legitimate that it’s hard for the average person to understand that he or she is at an illegitimate site versus a legitimate site,” said Robinson. “It’s much more difficult to know which sites are reputable on the Internet than walking down the street and deciding which shop to go in.”



The majority of pirated and counterfeit goods are shipped into the U.S. through international mail and express courier facilities. CBP Officers S. Burns, left, and Cory Bratton inspect shipments of DVDs from China at the Cincinnati DHL facility, one of the busiest express courier hubs. Photo by Brian Bell

Fighting Piracy at the Port

Combating piracy requires a coordinated effort. At the border, CBP evaluates goods to see if they pose a threat and if they violate any laws enforced by customs. If copyrights or trademarks are infringed, the goods are seized and prevented from getting into the stream of U.S. commerce.

The majority of pirated and counterfeit goods are shipped into the U.S. through international mail and express courier facilities such as Federal Express, DHL or UPS. One of the busiest, the DHL facility in Cincinnati, has the largest number of flights from Asia. During fiscal year 2013, a total of 16.4 million imported shipments came into the facility and 13.7 million exports went out.

"It's pretty fast-paced. There are a lot of packages coming through here," said Cory Bratton, one of the CBP officers assigned to the Asia team at the DHL facility. "Every package that comes here is subject to inspection and we select what we want to look at," he said. "It's just mind-blowing the amount

of packages that go through here. There are boxes going in every direction."

The CBP officers work closely with DHL. "We'll go to the exam floor and DHL has already held each package we've selected to look at," said Bratton. "Without their help, we wouldn't get nearly as much done. But we also have to understand it's a business for them and they're trying to get as many packages through as possible," he said. "We need to release the packages in a matter of minutes, sometimes less. They have to get everything out of here at a certain time so that it can be routed to the correct location to guarantee delivery for their customers."

The number of intellectual property seizures at the DHL Cincinnati facility is high. "Our targeting percentage is about 60 percent, which means that out of every 10 shipments we look at, we hold six of them for violations," said Eugene Matho, the assistant area port director of Cleveland, who oversees the Cincinnati DHL hub and two other express courier facilities in the region. "We don't have enough officers in these locations for the volume that comes in and the turnaround time. If we had more staff, we could do a lot more."

According to Matho, the trends for counterfeited and pirated goods are parallel to the trends for legitimate products. “When something is a very hot product, shortly thereafter we see the counterfeited or pirated version coming across the border,” he said. “For example, about five years ago, when cable television shows became popular, we saw the trend reflected in our seizures. Boxed sets of television and premium cable shows such as ‘The Sopranos’ and ‘Sex and the City’ were among the most pirated. Today, some of the hot items are ‘Game of Thrones,’ ‘Breaking Bad,’ ‘The Walking Dead,’ and Disney movies are always popular and infringed.”

Investigating Criminal Activity

When CBP finds illegal shipments that appear to be involved in criminal activity, HSI is contacted for further investigation. To expand its reach on

intellectual property rights cases, HSI started working more closely with state and local law enforcement. “We realized that we were never going to arrest or seize our way out of this problem, so it was critically important that we got state and local law enforcement involved,” said Kubiak.

One significant example occurred, in 2011, after CBP officers at the Cincinnati DHL facility noticed hundreds of shipments were being sent to someone by the name of Joseph Palmisano in Bartlett, Illinois, a northwest suburb of Chicago. “I was targeting shipments from Asia and saw that Palmisano had received about 800 shipments over the last five years. He was a heavy importer,” said CBP Officer S. Burns.

Burns stopped a number of the shipments. All had shipping labels that described the contents as “teaching supplies” or “bread boards.” But when he examined the packages, he found DVDs of movies and TV shows inside.

TOP 10 MOST PIRATED TV SHOWS 2014*



(IN MILLIONS)

1.	GAME OF THRONES	8.1
2.	THE WALKING DEAD	4.8
3.	THE BIG BANG THEORY	3.9
4.	HOW I MET YOUR MOTHER	3.5
5.	GOTHAM	3.2
6.	ARROW	2.9
7.	GREY'S ANATOMY	2.8
8.	VIKINGS	2.7
9.	SUITS	2.5
10.	SOUTH PARK	2.4

*SOURCE: TORRENTFREAK.COM

TOP 10 MOST PIRATED MOVIES OF 2014*



(IN MILLIONS)

1.	THE WOLF OF WALL STREET	30.0
2.	FROZEN	29.9
3.	ROBOCOP (BOTH 1987 AND 2014 VERSIONS)	29.8
4.	GRAVITY	29.3
5.	THE HOBBIT: THE DESOLATION OF SMAUG	27.6
6.	THOR: THE DARK WORLD	25.7
7.	CAPTAIN AMERICA: THE WINTER SOLDIER	25.6
8.	THE LEGEND OF HERCULES	25.1
9.	X-MEN: DAYS OF FUTURE PAST	24.3
10.	12 YEARS A SLAVE	23.6

*SOURCE: EXCIPIO



A mailing label on a package of counterfeit DVDs sent to Joseph Palmisano from Hong Kong. Palmisano used three different addresses—his actual address and two fake addresses. Photo by Bartlett, Illinois, Police Department

The HSI special agent decided to contact the Bartlett Police Department. “We were looking to foster relationships with local agencies and we felt this was the most effective route for us to go,” said Devineni, who explained that oftentimes more violent crimes take precedence over counterfeit investigations. “It’s a matter of allocating resources. In the city of Chicago, there are so many other crimes, such as gang violence and murder.”

Local Assistance

The Bartlett Police Department was receptive to taking the lead on the case, and quickly noted that there was something odd about the recipient’s mailing address. “The packages were all addressed to Joseph Palmisano, Joseph, Joe Joe, or Joe,” said Detective Tom Alagna from the Bartlett Police Department. “He was using three different addresses—his actual address and two fake addresses that would have been located next door to his house if they existed.”

Burns knew something was wrong. “There were misspellings in the film descriptions on the back covers,” he said. “The lettering was crooked and the routing of the packages was from Hong Kong.”

Burns sent a sample to a CBP import specialist in Cleveland. “The packaging looked like it could be counterfeit, but a CBP officer can’t make that determination. The only one who can determine that is an import specialist,” he said.

After Burns’ suspicions were confirmed, he seized the shipments. He also contacted HSI’s Chicago office. The special agent assigned to the case, Uday Devineni, immediately saw there was a problem. “There were 25 seizures over a six-week period from mid-August 2011 until the end of September 2011. And that’s just what we caught,” said Devineni.

But within a month, the shipments stopped. “We hit a dry spell. Nothing was coming in,” said Alagna. “I was in constant contact with CBP, HSI, and we did several hours of surveillance on the house. Cars never moved. Nothing happened.”

Then, as luck would have it, the detective drove by the house on patrol one day and saw that Palmisano’s garage was loaded with boxes. “We knew we couldn’t get a search warrant just based on seeing boxes in a garage,” said Alagna. However, shortly thereafter, on June 29, 2012, Alagna received a call around midnight from CBP Officer Burns. “He told me he was doing a routine check of imports and noticed there was a package scheduled to arrive at Palmisano’s address from Hong Kong,” said Alagna. “He said that the package was seized. When he opened it, it contained 130 counterfeit DVDs.”

The next day Burns contacted Alagna again. Another shipment from Hong Kong addressed to Palmisano was arriving in Los Angeles. "He had the package rerouted to Cincinnati so that he could seize it," said Alagna. Then Burns sent the shipments to Alagna so that the detective could obtain a search warrant for Palmisano's home and on July 5, 2012, law enforcement, with help from the MPAA, made a controlled delivery of the counterfeit goods.

More than 100,000 DVDs of counterfeit movies and television shows were found in Palmisano's home, making it one of the largest counterfeit DVD seizures in the Midwest. "We had two 24-foot moving trucks completely filled with DVDs," said Alagna. The estimated manufacturer's suggested retail price for the DVDs was \$1.35 million.

"When we spoke with Palmisano, he told us that last year he had sold more than \$660,000 of counterfeit films in a 10-month period. It's jaw dropping," said Alagna, noting that most of the merchandise was sold on Amazon.com.

The case was prosecuted at the state level and Palmisano, who was charged with one count of unlawful use of recorded sounds and images, pled guilty. He was sentenced to 30 months probation, 120 hours of community service, and was required to pay \$5,200 in fines to the MPAA, and \$9,800 in restitution to the Bartlett Police Department. Despite the fact that Palmisano did not go to jail, the case was successful. "It was a team effort," said Alagna. "Everybody's contributions were substantial and very, very critical. Without one of those pieces, the investigation would not have had a successful end."

Partnering Internationally

CBP, HSI, and other law enforcement agencies also fight film piracy on an international level. "We share



More than 100,000 counterfeit DVDs of movies and television shows were found in Joseph Palmisano's home in Bartlett, Illinois, making it one of the largest counterfeit DVD seizures in the Midwest. Photos by Bartlett, Illinois, Police Department.

data with a vast number of countries to help them increase their seizures through our customs mutual assistance agreements," said Kubiak. "We also provide training overseas to state, local, federal and regional investigators and customs officers globally. Both CBP and HSI work with the Department of State, the U.S. Patent and Trademark Office and the Department of Commerce."

In December 2013, CBP and HSI partnered with 10 law enforcement agencies from Europe and Asia in a 'Cyber Monday' sting operation that resulted in shutting down 706 websites that were selling counterfeit goods, including pirated movies and television shows. The worldwide operation, the largest to date, was part of an online digital theft

initiative called 'Operation in Our Sites,' which was launched by the Intellectual Property Rights Coordination Center in June 2010.

Training at the Ports

Rights holders also play a key role in fighting film piracy "We partner with other brand holders and conduct training sessions for CBP officers and import specialists," said Marc Lorenti, the MPAA's director of investigations for North America.

The training, which is organized by the International AntiCounterfeiting Coalition, is not limited to motion pictures. It includes products produced by companies such as Louis Vuitton, Burberry, Chanel, Rolex and others. "It's a very aggressive program," said Lorenti. "From a visual perspective, we teach the CBP officers and import specialists how to determine a genuine DVD from a fake, not only by looking at the packaging, but also by looking at the disc itself." One key component that quickly identifies if a film is genuine is the IFPI code, issued by the International Federation of Phonographic Industry as a means of authentication. "It's like a fingerprint etched on the core of the disc," he said.

According to Lorenti, the training, which began in September 2013, is already paying off. "The leads are coming in on a regular basis from CBP officers in the field who identify shipments being imported. Recently, CBP officers at Bradley International Airport in Connecticut reached out to us directly to authenticate shipments that had arrived at that port. We responded the next day," said Lorenti. "We were able to authenticate the shipment on site as being counterfeit, and then worked in conjunction with CBP to refer the case over to HSI."

The MPAA is also developing a software tool that will help CBP officers identify counterfeit DVDs

more quickly. "We're testing this tool right now," said Robinson, who hopes to share the technology more broadly with CBP. "We want to be part of the solution and we recognize that we have a responsibility to do that," he said. "We're not just going to CBP and other agencies and saying, 'Help us. We're a victim. It's your problem to correct.' We're in this together."

Closing the Gap

Others such as HBO, a premium television network with reported earnings of \$1.8 billion in 2013, and 127 million subscribers in nearly 70 countries worldwide, have found ways to close the gap on the delivery of their programming as technology has evolved. "Our production team at our studio has worked extremely hard to streamline the process for getting the content to all of the international affiliates and distribution partners in a way that allows them to air the show much closer or exactly the same day, date and time as it is shown in the U.S.," said Stephanie Abrutyn, vice president and senior counsel of litigation and anti-piracy for HBO. "Over the last 10-20 years, we have literally shifted from a model where someone had to take a hard copy of a program and put it on an airplane to every single one of these countries to a system where we can push a button and deliver it digitally in seconds."

"The film and television industry thrives on innovation, not only in how we create our great stories, but in the ways in which we can share them with the world. But as technology evolves, so, too, do the challenges and threats we face from piracy."

Former Senator Chris Dodd, chairman and CEO, MPAA

Still other challenges remain. "One of the biggest challenges we have is the volume of counterfeit

and pirated goods that are coming into the country,” said Therese Randazzo, CBP’s director of intellectual property rights policy and programs in Washington, D.C. “The laws under which we’re operating were put in place long before the Internet enabled easy sale of counterfeit and pirated goods directly to consumers. These shipments come in small packages at mail and express courier facilities as opposed to cargo, so it takes a lot more resources to examine and make infringement determinations,” she said. “We need a simpler, more streamlined process where we don’t jump through quite so many hoops. The Internet has changed importation of counterfeit and pirated goods, but the laws haven’t kept up,” she said.

But the real key is enlisting the public’s help. There are a number of resources to access movies

and TV shows legally. The MPAA’s website www.WheretoWatch.org is one of them. “Film piracy is not going to be eradicated until we eliminate consumer demand,” said Randazzo. “If we’re ever going to be successful in solving this problem, we need to educate the public and get them onboard.”

“The film and television industry thrives on innovation, not only in how we create our great stories, but in the ways in which we can share them with the world,” said former Senator Chris Dodd, chairman and CEO of the MPAA. “But as technology evolves, so, too, do the challenges and threats we face from piracy. Unfortunately, there’s no silver bullet that will solve this problem. The solution will come from all of us – governments, industries and consumers – working together to protect the work of creators in the digital age.”

A Higher Level of Protection for Rights Holders

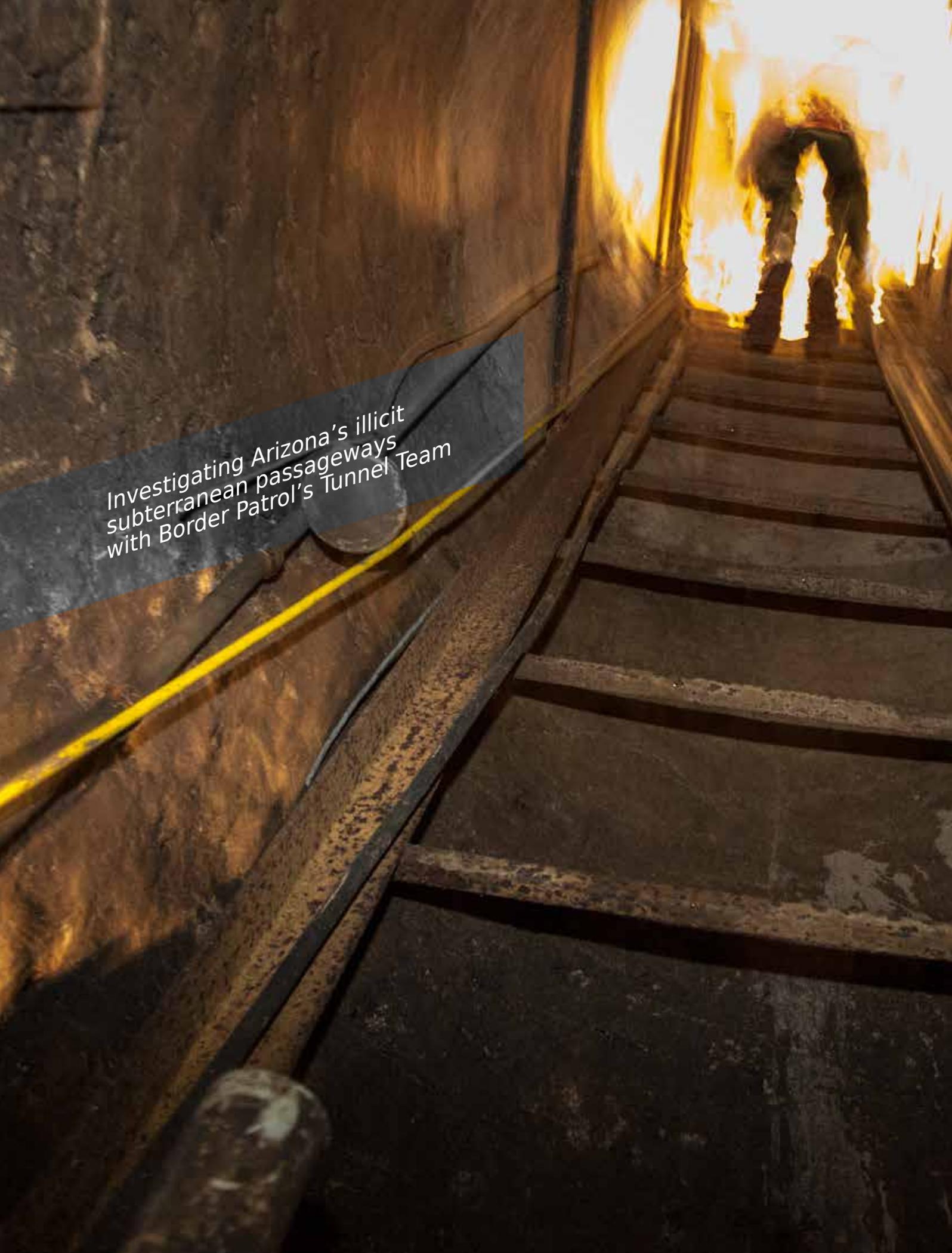
To protect rights holders, CBP has set up a recordation process to register trademarks and copyrights with the agency. “Sometimes trademark and copyright holders are unaware of the extent of the protection that CBP can afford them, so they don’t ask us for help,” said Therese Randazzo, the director of the intellectual property rights policy and programs division of CBP’s Office of International Trade in Washington, D.C.

By recording trademarks and copyrights, rights holders receive a higher level of protection. “We provide information to the rights holder about the parties involved in the seizure, the quantity of goods, the port the shipment entered, when the entry occurred, who shipped the merchandise, and who imported it,” said Randazzo. “That gives them information that they can use if they want to take legal action. Recordation also gives them access to samples of the infringing merchandise. But they would not receive any of this if they’re not recorded.”

Such was the case a few years ago when CBP officers discovered shipments of perfume that infringed HBO’s trademark ‘Sex and the City.’ “We told them that we were seeing a lot of perfumes that were using similar names. We knew there was a show and a movie, but we didn’t know if this was a product that they were making. We wanted to know if it was authentic,” said LaVonne Rees, a CBP international trade specialist in Los Angeles.

“We had seen suspected counterfeit fragrances before and couldn’t act on it because HBO wasn’t recorded with us. The company wasn’t registered with the U.S. Patent and Trademark Office,” said Rees. But that all changed. “In April 2011, HBO came to us and said, ‘We finally have this recorded. Here is our trademark number and now we want to do something about it because we can.’”

During fiscal year 2011, CBP seized imports of counterfeit perfume valued at nearly \$51 million. The fake fragrance that was most frequently intercepted infringed the ‘Sex and the City’ trademark. The 48 shipments that were seized had a domestic value of \$5.6 million. If the trademark had been genuine, the manufacturer’s suggested retail price of the perfume would have been worth more than \$34 million.



Investigating Arizona's illicit
subterranean passageways
with Border Patrol's Tunnel Team

WHAT LIES BENEATH

BY JASON MCCAMMACK • PHOTOS BY JOSH DENMARK

When Supervisory Border Patrol Agent Thomas Pittman began investigating the drainage systems beneath Nogales, Arizona 20 years ago, he discovered an underground Wild West.

“The drainage tunnels were wide open and people were just flooding through them,” Pittman said. “Back then the drains had gates [along the channel between Nogales and Mexico] that were made out of simple landing mat and the illegals would just break them open with no problem and make their way through.”

The Border Patrol installed heavy steel gates along the Nogales drainage system to tame the situation, but drug and human traffickers are nothing if not inventive. The new gates denied them unfettered access to Nogales, so they began hand digging their own tunnels that cut into the drainage system.

More than 180 tunnel attempts have been identified since the first cross-border tunnel was documented in Arizona on May 17, 1990. Tunnel discoveries have increased nationwide in recent years: 16 were discovered in fiscal year 2008; 27 more were found in fiscal year 2009; 13 were uncovered in fiscal year 2010; 18 in fiscal year 2011; 16 in fiscal year 2012; seven tunnels were found in fiscal year 2013 and 11 in fiscal year 2014.

Illegal tunneling may be increasing because Mexican drug cartels are finding it much more difficult to use traditional methods to get drugs into the United States. Since 2006, CBP has hired and trained 6,000 new Border Patrol agents, new border fencing has been constructed and the steel gates along the Nogales drainage systems have remained impassable.

“The smuggling organizations are very creative,” said Deputy Patrol Agent in Charge Kevin Hecht from Border Patrol’s Nogales Station. “Once they come upon significant resistance, like they did with the gates installed by Border Patrol, they don’t just give up. They try to find another way. “It is our job,” Hecht said, “to stay on top of them and prevent them from entering the U.S. illegally.”

Through May 2015, 113 tunnels have been discovered in the Tucson Sector and 107 of them were in Nogales. Nogales is the most active illegal tunneling area in the United States.

The Nogales Tunnel Task Force, headed by U.S. Immigration and Customs Enforcement’s Homeland Security Investigations, was established in 2011 and is made up of personnel from CBP, the Drug Enforcement Administration; and state and local agencies. Before the task force was created, the



A Border Patrol agent inspects the steel grates installed in Nogales' drainage system to prevent drug and human smuggling.



A Border Patrol agent in Nogales' main drainage system.

Nogales Station had a tunnel team to deal with illegal entries through drainage and infrastructure and via illicit tunnels in the Nogales area. The Border Patrol's Nogales tunnel team works closely with the Nogales Tunnel Task Force.

"Some members crawl the tunnels to investigate and examine the way the tunnels are constructed and if they

"Each of the approximately 15 members of the Border Patrol's tunnel team plays a critical role." Kevin Hecht, deputy patrol agent in charge, Nogales Border Patrol Station

do or do not cross the international border," Hecht said. "There are also confined-space rescue technicians — they're above ground and handle belay lines and tripod harnesses and whatever safety needs we require, including air quality meters, forced air ventilation and all the safety requirements and permitting.

"There's also the investigation side, he said, "where we have agents assigned to the task force. Those agents [work the] investigation of a tunnel once it's discovered."

Illicit tunnel diggers make rudimentary tunnels and then use simple, blunt tools to crack holes in the walls of the storm drains or other underground infrastructure. Once they have cracked into the U.S. underground infrastructure, they can travel through the entire system and smuggle drugs or humans or even support terrorist activities.

The tunnel team members are not afraid to get their hands dirty to combat these efforts. They regularly explore the maze of Nogales' underground infrastructure, including the drainage systems, taking note of structural integrity and searching for possible breaches made by smugglers. The practice is known as change detection. Change detection also can involve looking for footprints or scratch marks and investigating their source.

Exploring underground tunnels is not for everyone. The initial challenges are being in the right physical shape to crawl the tunnels and having the mindset

to be prepared for whatever could be lurking around the corner. Preparation is important and teamwork is essential.

“It’s a very close-knit group of people,” Hecht said. “We almost know what to do without saying [anything]. We do all safety checks and precautions before we make entry into the tunnel, but once we make it in, it’s still an unknown.”

RISE OF THE MACHINES

The Border Patrol’s Nogales tunnel team’s battle against drug traffickers recently got another ally: a wireless, camera-equipped robot. In a few of the most narrow, dangerous tunnels, the tunnel team deploys the robot to investigate the passages.

“Our current robot is designed for investigating pipes,” Hecht said. “If we can send a robot in first and clear the tunnel, it alleviates a lot of the safety concerns and helps us eliminate some of the unknown factors. Any way you look at it, we still have to verify and validate that the tunnel penetrates the border to classify it as a cross-border tunnel, so a person will need to enter the tunnel under our current standards of operation.”

The Nogales tunnel team has plenty of work to do above the surface as well. By building relationships in the Nogales community, it can reach out to businesses that could be exploited as cross-border tunneling locations. The team educates owners and employees on things to be on the lookout for and how to report any suspicious activities or contact by a transnational criminal organization.

“Whenever someone hears noises or sees something unusual – for instance, the city is working on a water main and they have a cave-in underneath the water main – they call us instantly,” Hecht said. “They know who to call; we’ve built that relationship with them.” We’ve also reached out to

any of the owners along the border – not renters – but the owners of the property, and they keep an eye out for us. They let us know: ‘Hey we heard something, we saw something out of the ordinary, some digging underneath my backyard,’ and they’ll give us a call.”

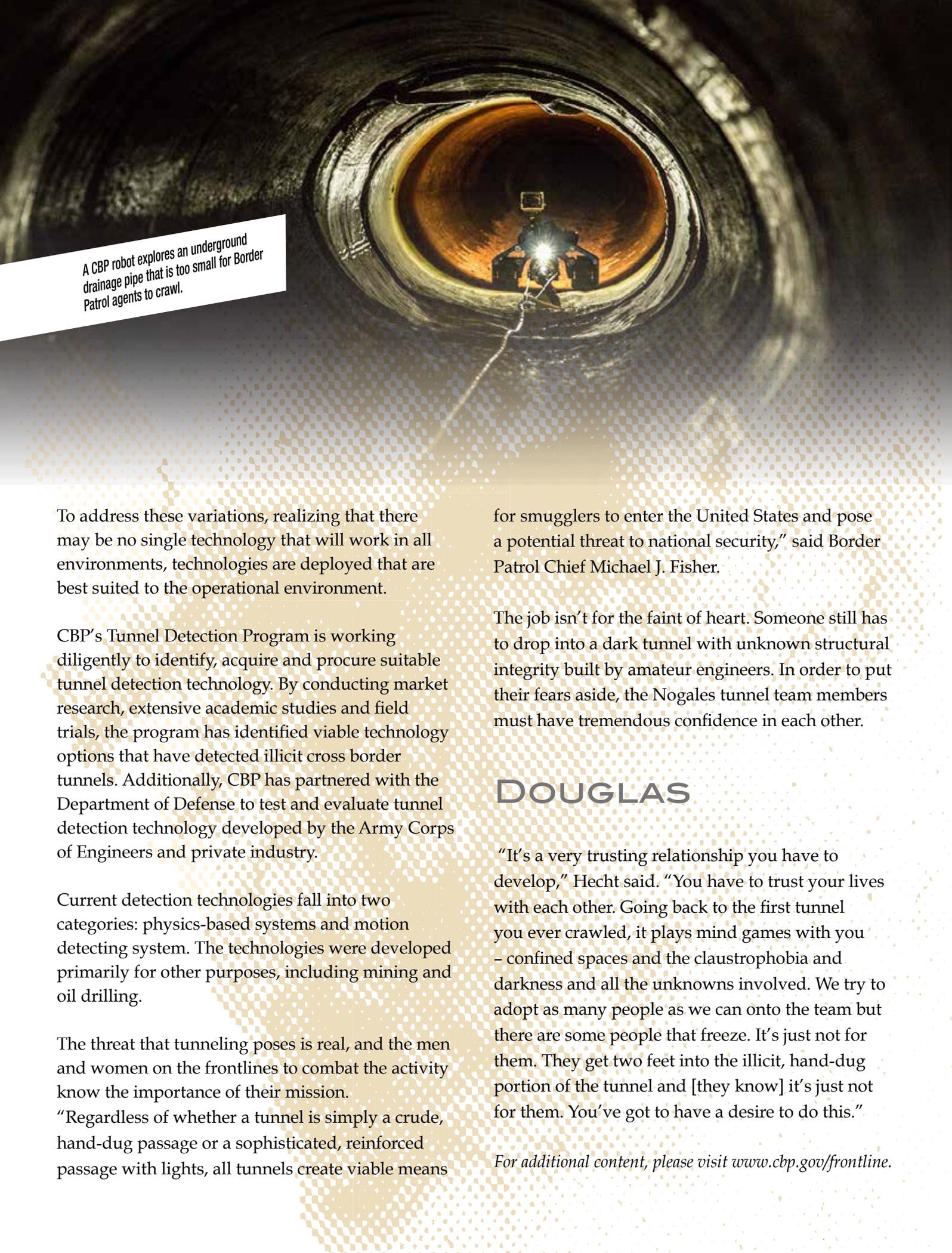
FILLING THE BREACH

When a tunnel is discovered, the passage must be thoroughly blocked to prevent trafficking. Remediation is the process of rendering a tunnel unusable following interdiction. The type of remediation used depends on the tunnel type. For example, a hand-dug tunnel may be filled with concrete, while a corrugated cut-out (in a storm drain, for instance) must be repaired with a contractor-fabricated, CBP-approved patch or liner.

CBP’s finance, facilities management and engineering teams are responsible for tunnel remediation. The general practice is to plug tunnels as quickly as possible.

Virginia Quiambao of CBP’s facilities division works with tunnel remediation and related activities.

“Illegal cross-border tunnel remediation is an extensive internal and external interagency effort to impede passage of humans and/or contraband with the intent of avoiding inspection, she said. “CBP works with business partners to manage and execute right of entry agreements and environmental and real estate activities. Consistent interagency coordination and communication is necessary to streamline tunnel remediation” Tunnel detection technology offers a promising, long-term strategy for enhancing subterranean situational awareness and combating the threat of illegal cross-border tunnels. It is inherently challenging to detect tunnels of varying diameters at different depths in different types of ground.

A photograph showing a small, dark robot with a bright light on its front, crawling inside a large, circular, underground drainage pipe. The pipe's interior is dark and textured, with a bright light source illuminating the robot and the surrounding walls. A white text box is overlaid on the left side of the image.

A CBP robot explores an underground drainage pipe that is too small for Border Patrol agents to crawl.

To address these variations, realizing that there may be no single technology that will work in all environments, technologies are deployed that are best suited to the operational environment.

CBP's Tunnel Detection Program is working diligently to identify, acquire and procure suitable tunnel detection technology. By conducting market research, extensive academic studies and field trials, the program has identified viable technology options that have detected illicit cross border tunnels. Additionally, CBP has partnered with the Department of Defense to test and evaluate tunnel detection technology developed by the Army Corps of Engineers and private industry.

Current detection technologies fall into two categories: physics-based systems and motion detecting system. The technologies were developed primarily for other purposes, including mining and oil drilling.

The threat that tunneling poses is real, and the men and women on the frontlines to combat the activity know the importance of their mission.

"Regardless of whether a tunnel is simply a crude, hand-dug passage or a sophisticated, reinforced passage with lights, all tunnels create viable means

for smugglers to enter the United States and pose a potential threat to national security," said Border Patrol Chief Michael J. Fisher.

The job isn't for the faint of heart. Someone still has to drop into a dark tunnel with unknown structural integrity built by amateur engineers. In order to put their fears aside, the Nogales tunnel team members must have tremendous confidence in each other.

DOUGLAS

"It's a very trusting relationship you have to develop," Hecht said. "You have to trust your lives with each other. Going back to the first tunnel you ever crawled, it plays mind games with you - confined spaces and the claustrophobia and darkness and all the unknowns involved. We try to adopt as many people as we can onto the team but there are some people that freeze. It's just not for them. They get two feet into the illicit, hand-dug portion of the tunnel and [they know] it's just not for them. You've got to have a desire to do this."

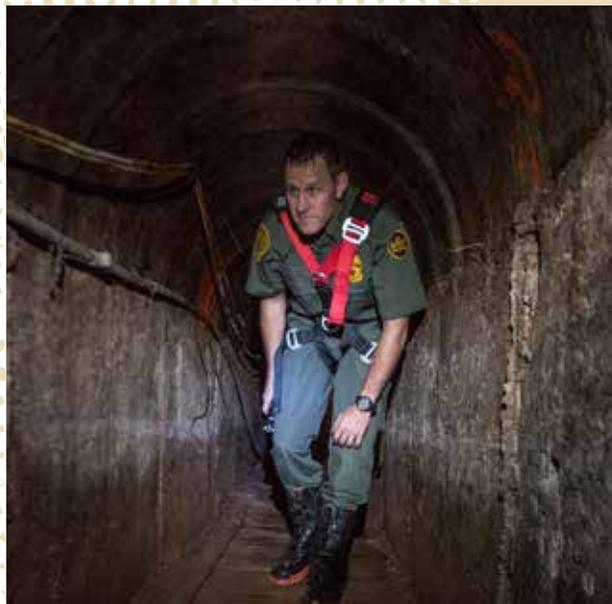
For additional content, please visit www.cbp.gov/frontline.



Rudimentary



Interconnecting



Sophisticated

DIFFERENT TUNNEL TYPES, SAME GOAL: UNDERMINE THE U.S. BORDER

Tunnels have been found both on the northern and southern borders through diligent law enforcement work, human intelligence, and even by accident when roads have caved in due to vehicle weight. Since the first tunnel was discovered, cross-border tunnels have become more and more advanced.

Three basic types of illegal tunnels are used to circumvent the U.S. border:

Rudimentary: This type of tunnel is crudely constructed and travels a short distance, less than 20 feet. These tunnels do not use shoring, machinery, electrical power or ventilation. The entrance to a rudimentary tunnel is usually open air or concealed by something as simple as a piece of plywood.

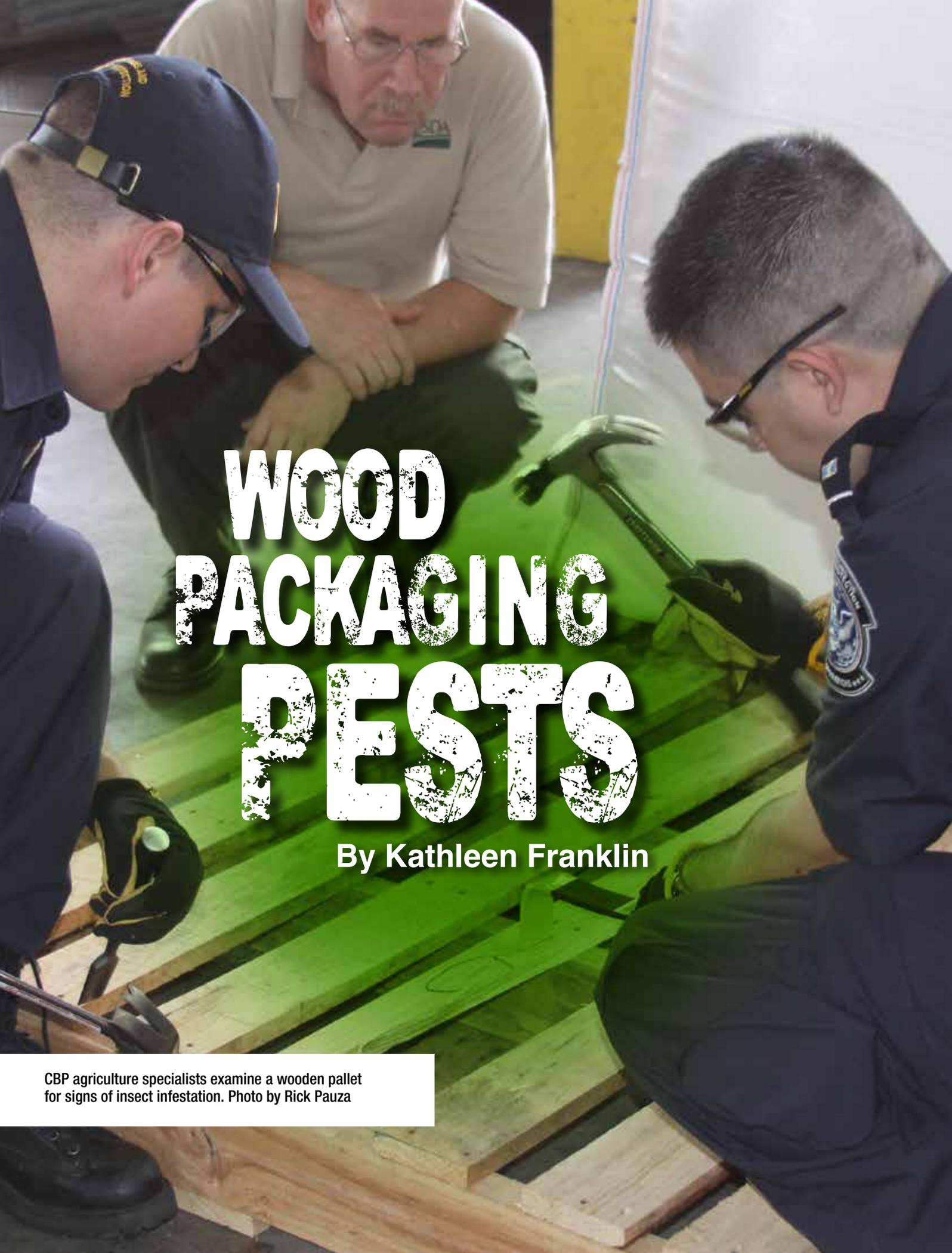
Interconnecting: This type uses at least one purpose-built section to connect existing underground infrastructure. This includes tunnels that use roads or sidewalks as one or more of the walls for the tunnel. The purpose-built section is often crudely constructed. One specific type of interconnecting tunnel is known as a corrugated cutout. This occurs when a tunnel builder cuts a hole in a corrugated drainpipe. These tunnels usually exit into underground infrastructure in the United States. Once in the United States, users of interconnecting tunnels navigate through infrastructure (like storm drains) with access to multiple exit points as far as a mile from the border.

Sophisticated: A sophisticated tunnel is elaborately constructed and may use shoring, ventilation, electricity, railroads or water pumps. These tunnels usually span a long distance. The entrance and exit points of sophisticated tunnels are often located within homes or warehouses. These tunnels, even if they are only open for a short period, can allow traffickers to move massive amounts of drugs, humans, currency, and firearms back-and-forth between Mexico and the United States.

The soil of the tunnel area often dictates the type of tunnel.

"Some tunnels can have characteristics of all three common tunnel types," said Deputy Patrol Agent in Charge Kevin Hecht from Border Patrol's Nogales Station. "Some are interconnecting but have some sophisticated parts to them and also have rudimentary [portions], depending on the soil type."

The traffickers continue to innovate in their tunnel production, Hecht said. "There's also a fourth, less common type of tunnel that has come to light lately," he said. "The latest threats are horizontal, directional-drill tunnels, which are very small-diameter tunnels. None have been discovered to be actually operational, but there have been numerous attempts discovered. The intent behind those is to pressurize a pipe similar to a bank teller system, where they would send the drugs pressurized through a pipe."

A photograph showing three men in work attire examining a wooden pallet. One man on the right is using a hammer to inspect a board. The man in the center is looking on, and the man on the left is also observing. The scene is set in a warehouse or industrial environment with a large white bag in the background.

WOOD PACKAGING PESTS

By Kathleen Franklin

CBP agriculture specialists examine a wooden pallet for signs of insect infestation. Photo by Rick Pauza



What would you say is the most serious threat to our nation's forests? Wildfires? Logging and timber industry interests? Urban sprawl and development?

It's actually something smaller than a paper clip. It's an insect.

Make that insects – specifically, non-native, invasive wood-boring beetles such as the emerald ash borer and the Asian longhorn beetle. Insects actually destroy more timber each year than wildfires, but because they quietly do their damage to small, isolated stands of trees in remote areas, they don't make the headlines like more photogenic wildfires.

Customs and Border Protection agriculture specialists are responsible for intercepting these wood-boring pests at U.S. ports of entry. Currently, agriculture specialists work at 167 sea, air and land ports of entry. Their mission is preventing the entry of invasive plants and foreign animal diseases. Some cargo entering the U.S., whether at a land,

sea, or air port of entry, is packed on or in wood packaging material. This material is subject to rules and regulations that require it to be treated to prevent pest infestation.

Agriculture is the largest industry and employer in the U.S., with more than \$1 trillion in annual economic activity. Invasive species have caused \$138 billion annually in lost agriculture revenue, according to the U.S. Department of Agriculture.

Native insects – even those that feed on trees, such as the mountain pine beetle – are valuable sources of food for birds and other wildlife.

Non-native pests – often referred to as invasive – pose an increased threat because they have few natural predators. Native bird populations have not developed a taste for, say, the Asian longhorned beetle and are not likely to do so for thousands of years. Mother Nature takes her sweet time when it comes to evolution.

The Invaders

Of the eight families of wood-boring pests, Cerambycidae (longhorn) and Buprestidae (metallic wood-boring) beetles are especially destructive because they bore deep into the centers of trees and are thus more difficult to detect and eradicate.

Probably the most dangerous wood-boring pest is the Asian longhorned beetle (*Anoplophora glabripennis*). This beetle is native to eastern China, Korea and Japan. It was accidentally introduced into the U.S. in the 1980s – most likely on wood packaging material holding plumbing supplies from China that was sent to a warehouse in Brooklyn, New York. From there, infestations were eventually reported in New Jersey and upstate New York.

WOOD PACKAGING MATERIAL • PESTS OF CONCERN

BUPRESTIDAE



METALLIC BEETLES

CERAMBYCIDAE



LONG HORNED BEETLES

COSSIDAE



CARPENTER MOTHS
& LEOPARD MOTHS

CURCULIONIDAE



BARK WEEVILS

PLATYPODIDAE



PINHOLE BORERS
(MOST COMMON INTERCEPTION)

SCOLYTIDAE



BARK BEETLES

SESIIDAE



CLEARWING MOTHS

SIRICIDAE



WOOD WASPS

In 1998, the Asian longhorned beetle was spotted in Chicago; in 2005, two adult specimens were found outside of a warehouse in Sacramento, California. Since then, there have been several reported in Massachusetts and one reported sighting in Ohio.

The emerald ash borer (*Agrilus planipennis*) is another invasive pest. It is native to Asia and Eastern Russia, and it was first found in America in June 2002 in Michigan. It, too, was probably brought into the U.S. unintentionally in ash wood dunnage, which stabilizes cargo during shipping. The emerald ash borer can also travel via the movement of firewood and nursery tree stock.

Unlike the Asian longhorned beetle, however, the ash borer feeds only on ash trees. The adult beetles attack ash foliage but cause little damage. The larvae (the immature stage) are far more dangerous, creating tunnels or “galleries” inside the trees’ inner bark, disrupting their ability to transport water and nutrients.

As a major private landowner, Plum Creek shares concerns about protecting against insect infestations. The inspection efforts made each day by CBP agriculture specialists help ward against these threats to forest health,” said Rick Holley, chief executive officer of Plum Creek, one of the nation’s leading land and timber companies and one of the largest private landowners in the United States. Headquartered in Seattle, Plum Creek manages more than six million acres of timberland in 19 states.

The Asian longhorned beetle typically does not disperse more than a few hundred yards from where it hatches. However, the emerald ash borer is a robust flier, capable of immediate flight upon emerging from the host tree and able to cover distances of up to a half mile at a time.

By the time both of these pests are detected in trees, the damage is usually irreversible. Typically, the tree will be dead within several years.

The Stakes

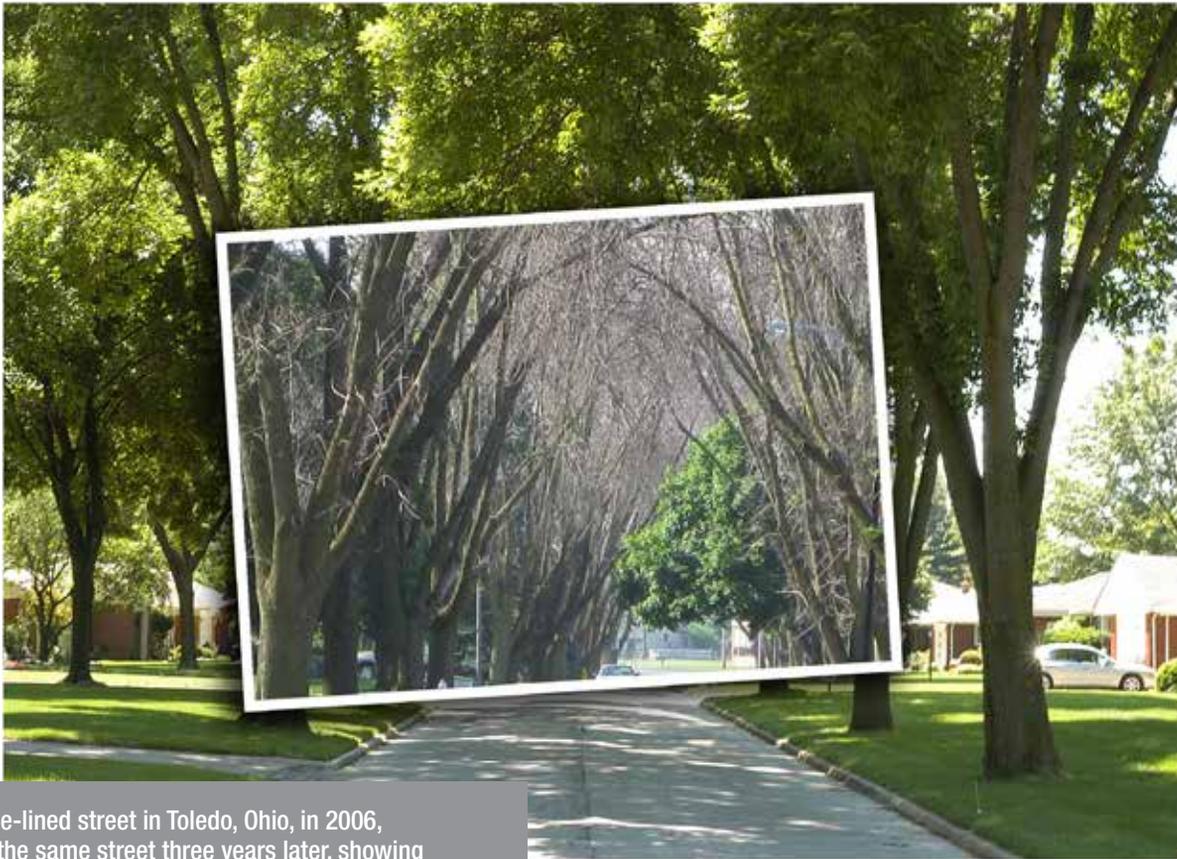
The U.S. is the largest exporter of wood in the world. Annual production is more than 30 billion board feet, making the U.S. the largest producer and consumer of lumber. (In the lumber industry, one “board foot” equals the volume of a one-foot length of a board that is one foot wide and one inch thick.)

According to the United States Department of Agriculture Forest Service, the U.S. boasts 232,592,650 acres of forest and the U.S. timber industry is a \$1 billion annual market. The timber industry employs more than 80,000 workers in the sawmill and wood preservation industries, while another 230,000 Americans directly depend on sawmills for their employment.

The Asian longhorned beetle infests 24 species of hardwood trees, primarily maple, willow and elm. Adults feed on healthy bark as well as trees’ interiors, typically destroying each tree from the inside out and making the eradication of the beetle larvae nearly impossible.

A study by the USDA Forest Service estimates that if the Asian longhorned beetle becomes established, it could destroy 30 percent of all urban trees – as many as 1.2 billion trees – for a loss of as much as \$669 billion.

More than 1,500 trees in Chicago were cut down as part of the eradication process in that city, which took 10 years and cost \$70 million. In many areas, surrounding stands of healthy trees have been removed to prevent further spread of the pest. In New York, more than 6,000 infested trees resulted in the removal of 18,000 healthy trees. The story is much the same in New Jersey, where an infestation of 700 trees led to the purposeful destruction of nearly 23,000 trees.



A tree-lined street in Toledo, Ohio, in 2006, and the same street three years later, showing the destructive effects of the emerald ash borer. Photo by Daniel A. Herms, Ohio State University

This beetle is so destructive that in China it has damaged approximately 40 percent of poplar plantations, rendering the wood suitable only for packaging material. More than 50 million trees were destroyed over a three-year period in just one Chinese province because of Asian longhorned beetle infestations.

That destruction occurred in a country that harbors natural predators that can keep the beetle populations in check. The situation would be far worse here. If the Asian longhorned beetle becomes established in the U.S., it could eventually destroy 1.2 billion trees – roughly one-third of all U.S. trees.

Quarantines around infested U.S. areas prevent the accidental spread of the pest by people who transport firewood or dispose of downed trees and limbs. Infested trees are removed, chipped in place, and the chips are burned to destroy all stages of the insect's life cycle, and stumps are ground to below the soil level.

As for the emerald ash borer, there are approximately 8 billion ash trees in the U.S. In mid-2002, scientists suspected that widespread damage to ash trees in southern Michigan – particularly in and around Detroit – was caused by the ash borer. Even worse, the pest was believed to have been established in Michigan for at least 10 years by the time of its discovery.

As of 2011, over 50 million trees have been cut down due to emerald ash borer infestation. The pest has spread to 22 states in the U.S. and two provinces in Canada. Most states have placed quarantines on infected areas by prohibiting the transport of ash nursery stock, ash timber products and ash firewood.

The Transport

Wood packaging material is wood or wood products (excluding paper products) that support,

protect or carry a commodity. It is primarily pallets, but also includes dunnage.

Compared to plastic and metal, pallets and other packaging material made from wood are plentiful and cheap. Most pallets can carry up to 1 ton of cargo. The U.S. produces more than half a billion pallets each year, and about 2 billion pallets are in use across the nation at any given time.

Proponents of plastic pallets argue that using wood to make pallets and other packaging materials contributes to deforestation, helps the spread of invasive pests, and requires chemical or heat treatments to kill insects and pathogens. They also note that plastic pallets benefit the environment by reducing the amount of fuel needed to transport goods because each plastic pallet typically weighs as much as 50 pounds less than its wooden counterpart.

Nevertheless, wood continues to outpace the demand for other materials in the pallet market. Wood is cheap, plentiful, easy to repair, biodegradable, and more easily recyclable into mulch, paper, or poster board. According to the most recent pallet user survey conducted by Modern Materials Handling magazine, wood continues to dominate the pallet market, with 95 percent of respondents reporting that they use wooden pallets at their facility.

All this wood is irresistible to wood-boring insects. They consume the wood, and their excretions – called frass – are telltale signs of infestation in shipping containers and on or near wood packaging materials.

The rising volume of trade means that there are increasing opportunities for wood-boring pests to gain entry to the U.S. Because of the wood borer infestations in the 1990s, the USDA's Animal and Plant Health Inspection Service finalized its import regulations for wood packaging materials in 2004

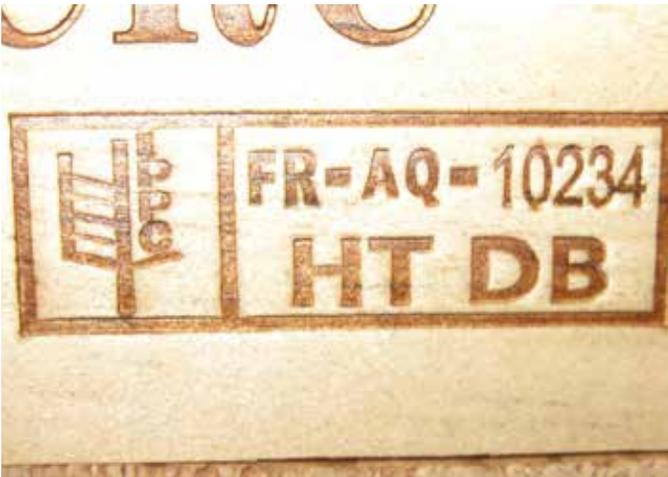
to require these materials from all countries to be chemically treated (usually with methyl bromide) or subject to heat treatment, such as being placed in a kiln to be dried.

Today, wood packaging materials entering the U.S. must bear a special marking – called an International Plant Protection Convention, or IPPC, certification symbol – proving that it has been treated. The International Plant Protection Convention is an international treaty to prevent the spread of pests that attack plants and plant products. Recognizing the potential problem, other nations have adopted similar measures.

The IPPC adopted the International Standards for Phytosanitary Measures, known as ISPM 15,

This wood shows the damage caused by wood-boring insect pests.





A stamp shows the U.S. as the pallet's country of origin and indicates it has been subjected to heat treatment. Photo by McVantage Packaging



A fake international plant protection convention stamp.

in 2004. These standards require wood packaging material to be either heat-treated or fumigated to rid the material of dangerous pests.

To comply with these standards, wood packaging material must be marked with the IPPC symbol in a visible location on each article, preferably on at least two opposite sides of the article, with a legible and permanent mark. This IPPC mark is known colloquially as a “wheat stamp.”

Products that are exempt from ISPM 15 standards are made from paper, plastic, or wood panel products, such as particle board and plywood.

Some shippers who want to avoid the time and effort it takes to have their wood packaging materials properly treated have been known to get creative, hand-drawing the IPPC stamp on the wood packaging materials

For companies that export to the U.S., compliance with the ISPM 15 rules is of paramount importance. Wood packaging material that does not bear the ISPM 15 stamp must be re-exported (sent back to

its country of origin) immediately, usually with the associated commodity itself. Even if the material has the proper markings, it must be re-exported if it contains a wood-boring insect. If that insect poses an immediate risk of introduction, e.g., if it's an emerging adult, the shipment may need to be fumigated prior to re-export.

This all results in lost revenue and costly delays for both the exporter and for the U.S. importer seeking to use or resell the commodity.

The Cargo

The commodities with the highest incidence of wood packaging material pest interceptions are metal and stone products (including tile), machinery (such as automobile parts and farm equipment), electronics, bulk food shipments and finished wood articles.

In fiscal year 2012, the top five ports to first receive shipments with non-compliant wood packaging

materials were Laredo, Texas; Pharr, Texas; Blaine, Washington; Long Beach, California; and Romulus, Michigan. The top five did not change appreciably during fiscal year 2013. Blaine, Laredo, and Pharr continue to top the list, with Brownsville, Texas, and Houston bringing up the rear.

That is because approximately half (48 percent) of the total national non-compliant wood packaging material shipments originate in Mexico. China is second to Mexico as the leading source of non-compliant wood packaging material shipments, followed by India and Germany.

For example, a 2014 shipment of fresh corn arrived at the Nogales port of entry in Arizona. A CBP agriculture specialist found eight immature Scolytidae sp., in wooden pallets bearing the pre-treatment certification stamp. Scolytidae are a family of bark beetles that includes the mountain pine beetle – but also the European elm bark beetles, which can transmit Dutch elm disease fungi. The corn was shipped back to Mexico.

The list goes on:

At the Los Angeles/Long Beach seaport a CBP agriculture specialist examined a shipment of shotguns from Turkey and noticed tunnels called “galleries,” and insect excrement – called “frass” – throughout insect galleries and frass throughout the wood packaging. The specialist split open a piece of wood and found a larva identified by the USDA as Asian longhorned beetle. CBP instructed the importer to re-export the shipment.

At the land border port of entry in International Falls, Minnesota, a CBP agriculture specialist inspected a shipment of auto parts from China and found wood-boring insects in the packaging material. The USDA identified one live adult specimen as Curculionidae, a Japanese weevil. The shipment was refused entry and re-exported.

A commercial shipment of laser printer toner cartridges, destined for Kentucky, was inspected at the El Paso, Texas, port of entry. A CBP agriculture specialist discovered three live adult wood boring pests in a pallet. The shipment was re-exported to Mexico.

In Seattle, a CBP agriculture specialist inspected a shipment of Turkish porcelain tile, destined for Texas, and discovered a live beetle larva in the stamped wood packaging material. The USDA identified the insect as metallic beetle, and the tiles went back to Turkey.

CBP Agriculture Specialist Miguel Garcia checks wooden pallets for signs of pest infestation. Photo by Eddie Perez





CBP Agriculture Specialist Aaron Smith searches for wood-boring pests in wood packaging material at the port of Tacoma, Washington. Photo by CBP

The Specialist

CBP Agriculture Specialist Miguel “Mike” Garcia was teaching seventh-grade biology when 9/11 changed America and its borders forever.

“I had wanted to be a physical therapist and possibly become a doctor, and I even trained as a PT technician in college,” Garcia recalled. “But I went into teaching, and after the Sept. 11, 2001, attacks I thought about joining Border Patrol.”

Garcia’s brother-in-law, who was an IT specialist for the USDA at the time, tipped him off to opportunities at the agency, and Garcia joined the Plant Protection and Quarantine division of USDA’s Animal and Plant Health Inspection Service. Garcia

and many of his colleagues transitioned to become CBP agriculture specialists.

All CBP agriculture specialists must possess a bachelor’s or higher degree with a major in biological sciences or a combination of experience and education that includes 24 semester hours in biological sciences. New recruits must successfully complete 10 to 12 weeks of training at the USDA’s Professional Development Center, which has trained agriculture specialists since the inception of CBP in 2003.

“Our agriculture specialists work very hard to protect our natural resources and American agriculture” said Mikel Tookes, deputy executive director for Office of Field Operations Agriculture Programs and Trade Liaison. “We are vigilant, talented and dedicated to our mission.”

Garcia spent seven months at the cargo lot in Pharr, Texas, where he said it was easy to spot insects. “Pharr was a lot of work because the volume of produce, machinery, all kinds of cargo on pallets that come through port is just huge. You can pretty

Garcia became adept at spotting bugs. During his rookie year as an agriculture specialist, his talents for finding six-legged stowaways earned him a Blue Eagle award, which is presented to CBP personnel in recognition of an enforcement action that achieves significant results beyond expected daily duties. “I found an *Anastrepha* – a Mexican fruit fly – in a truck bed, so we sent the truck back. Two weeks later, we found another. At this point, we started checking everything. And we narrowed the problem down to manzano peppers that were coming out of a particular warehouse.” He figures

that solving that little problem may have saved as much as \$1 million for U.S. farmers who were spared the trouble of dealing with the destructive creatures.

Garcia currently works at the Veterans International Bridge in Brownsville, Texas, and he continues to hone his skills and talents on wood packaging and pallet inspections.

And there are a lot of pallets. Laredo is just across the border from an area of Mexico that has numerous maquiladoras – factories that import material and equipment on a duty-free or tariff-free basis to produce everything from auto parts and apparel to electronics, furniture, and appliances. Mexico’s 3,000 maquiladoras account for half of Mexico’s exports, and the trucks keep coming, all day, every day.



Adult specimen of emerald ash borer.
Photo by USDA

Dr. Steven Lingafelter oversees the largest collection of wood boring beetles in the United States. Photo by James Tourtellotte



Garcia has proven to be so good at detecting and removing wood-boring insects that he quickly earned a nickname: the Beaver.

“You can find bugs everywhere,” Garcia said. “You just have to know where to look and what to look for.” Garcia’s training has paid off. For example, he has intercepted many beetles from Russia that are in the same family as the Asian longhorned beetle. Garcia’s talents aren’t limited to wood-boring pests. He also has intercepted other highly destructive invasive pests, including Asian gypsy moth and Mexican fruit fly. He also stopped a pest called a melon thrip – *Thrips palmi* Karny – while inspecting a shipment of eggplants from Mexico. It

was the first time this pest had been intercepted on the U.S.-Mexico border. The melon thrip feeds on a wide range of ornamental plants and crops and can be vectors of plant viruses.

The most challenging aspect of his work, according to Garcia, is educating brokers about the importance of making sure their trucks and pallets are pest-free. “That, and the paperwork,” Garcia said with a smile.

The Scientist

en-to-mol-o-gy [en-tuh-mol-uh-jee] - the branch of zoology dealing with the study of insects.

A fair share of many CBP agriculture specialists' paperwork finds its way to Dr. Steven W. Lingafelter. He is a research entomologist for the USDA Research Service, based at the Smithsonian Institution's National Museum of Natural History in Washington, D.C.

He has been studying insects his entire life. "I have had a lifelong interest in biology and I always collected insects as a kid," Lingafelter said. "Initially, I was going to be a veterinarian until I realized I could also get a job as an entomologist."

Lingafelter earned bachelor's and master's degrees from Midwestern State University (Wichita Falls, Texas) and a doctorate from the University of Kansas (Lawrence, Kansas) and, like many scientists, he peers into his fair share of microscopes.

But at the Systematic Entomology Laboratory he begins his workday pretty much like most people: returning phone calls and fielding emails. Those duties are usually followed by a few hours working on various research papers.

By late morning, the fun begins. "The first of my identification lots arrive - these are specimens intercepted by CBP agriculture specialists at ports of entry around the country, usually found in cargo or in passengers' luggage," said Lingafelter.

But wait times don't just affect travelers and cargo; insects have to take a number in Lingafelter's lab. "I often have too many identifications to keep up with," he said. "The specimens come in from all over the country, from CBP ports of entry as well as from university scientists and agricultural extension offices."

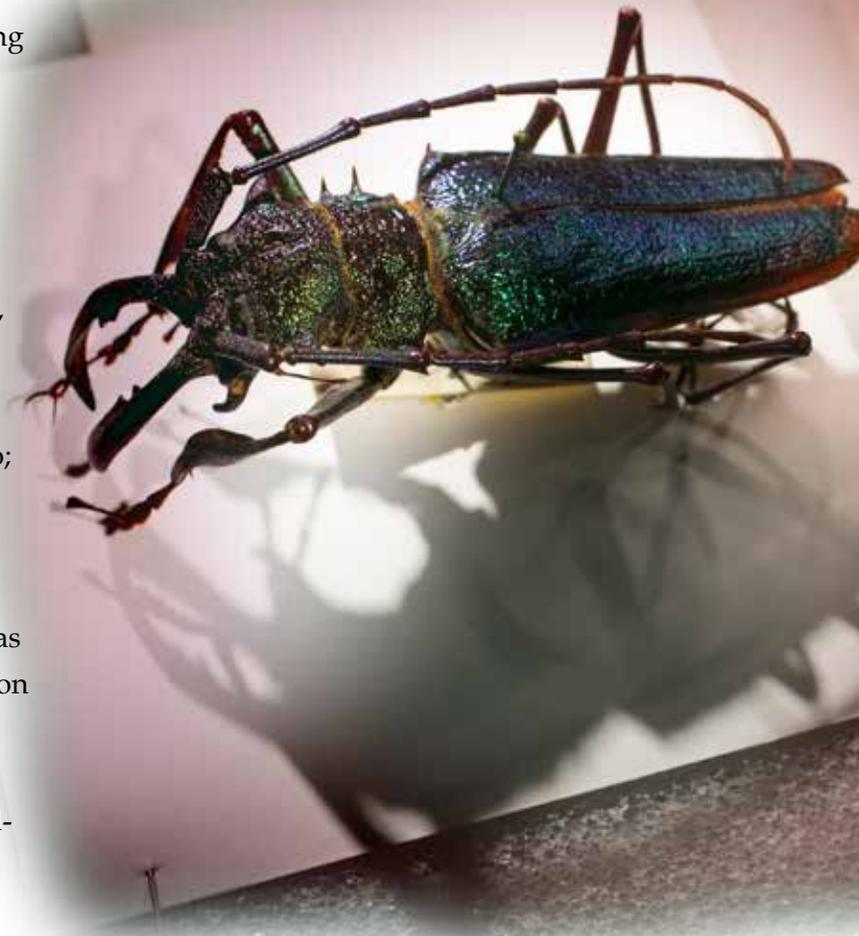
Lingafelter oversees the largest collection of wood-boring beetles outside of Europe, so he receives

daily requests for identifications from all over the world. "Most of these involve looking at specimens, sending loans, getting literature, etc. It is very difficult to stay on top of this and maintain a strong research output," he said.

Lingafelter and his colleagues are acutely aware of the importance of their identifications, because cargo is not permitted to proceed into the country until the specimens are identified to prevent the potential introduction of invasive or destructive species.

"I enjoy working with specimens and making determinations of their species or, in some cases,

An emerald ash borer (*agrilus planipennis*) is meticulously mounted with pins at the USDA Research Service at the Smithsonian Institution's National Museum Of Natural History in Washington, D.C. Photo by James Tourtellotte



determining that they are new to science and need formal descriptions,” he said. “The incredible diversity of beetles is what makes my job exciting. Every day I see something new or rare.”

It can be painstaking work. “The identifications can take a few hours,” Lingafelter noted. In the afternoon, if time permits, Lingafelter tackles more research and, as the editor of two scientific journals, he also reviews papers submitted by others. He oversees the cataloguing and storage of specimens and provides occasional tours to visiting scientists and students who want to study his processes.

His collection is vast, and it has been in the works for decades. The Smithsonian’s first wood-boring insect specimen dates from the 1860s. On the 10th floor of a building recently constructed in a former courtyard inside the Smithsonian’s Natural History Museum, Lingafelter and his colleagues toil in a ring of offices that surround row after row of tall



An emerald ash borer larva burrows through wood. Photo by David Cappaert, courtesy of Michigan State University

metal lockers – each of which can hold as many as 30 cases of specimens. Each case can contain dozens

of insects, all meticulously mounted on pins and labeled.

As an entomologist, Lingafelter’s area of expertise is beetles – particularly the families Cerambycidae and Buprestidae. “My two research families include the Asian longhorned beetle and the emerald ash borer,” he explained. “These two very important pests have gotten the attention of the U.S. forestry and timber industries recently.”

And for good reason. Wood-boring insects can decimate entire forests.

“The number one [agriculture] concern at the border should be to keep out invasive pests,” Lingafelter said.

“Any wood-boring or plant-feeding species – regardless of whether it poses a problem in the native country or not – has the potential to be a major and costly pest here in the U.S.” Entire ecosystems could change because there are no natural predators or diseases here to keep these pests’ numbers in check.

“The Asian longhorned beetle is a perfect example of a species that attacked many more hosts than previously known for the species,” Lingafelter explained. “This pest radiated out from the introduction points in New York and Chicago, infesting many available trees. The only way to eradicate or control them was to destroy all trees that showed any evidence of infestation. This was, and is, a very costly and extreme measure, but it is necessary to prevent further spread.”

The other major groups of wood-boring pests are scolytides (considered now as a subfamily of

weevils). These small beetles can build up immense populations. “Scolytids can have periodic outbreaks that can kill thousands of acres of pine trees, making large tracts of forest very susceptible to forest fires,” Lingafelter noted. “Some species can transmit Dutch Elm disease, which has devastated the North American elm population.”

Some observers have proposed careful introductions of these insects’ natural predators from their native countries. But Lingafelter and other scientists warn that the intentional introduction of non-native predators to control those invasive species would need to be done with extreme caution.

“Just as we don’t know the full ramifications of an invasive species, with regard to what new hosts it will infest, we don’t know exactly how a predator will behave,” he pointed out. “Perhaps the predator will attack other native, potentially beneficial insects. History is riddled with failed examples of intentional importation of predators.”

Lingafelter cited the example of the cane toad in Australia, which was intentionally imported to control the sugar cane beetles and which then resulted in the destruction of many native animals because of the toad’s toxins.

“CBP agriculture specialists are vital to protecting our timber resources from the potentially devastating impacts that these invasive pests could have on our forests,” Lingafelter observed.



An adult emerald ash borer is shown next to a nickel. Damage to the tree's interior is clearly visible. Photo by Eric R. Day, Virginia Polytechnic Institute and State University, Bugwood.org



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