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ELECTRONIC FREIGHT SECURITY: ENSURING SAFER IN-TRANSIT CARGO SHIPPING IN MEXICO AND BRAZIL

As cargo criminals become more sophisticated and emboldened, global manufacturers, logistics companies and supply chain stakeholders are searching for the most effective way to protect their in-transit cargo.

This is especially true in high-risk countries like Brazil and Mexico where cargo is often hijacked and stolen while in route or in urban areas, commonly with a threat to human life. When transporting cargo in these regions, simple security measures are insufficient and can lead to costly losses of product and life.

The highest risks in Mexico: Hijacking in-transit and violence

According to a report by the Sensitech Supply Chain Intelligence Center (SCIC), Mexico is one of four countries with the highest risk of cargo theft worldwide.

IIn the Q1-2021 Cargo Theft Intelligence Report from the SCIC, 85% of cargo theft in Mexico occurred while in transit, and in 87% of the incidents, hijacking was the modus operandi. Products in the Food & Drinks category were stolen the most (42%), followed by Pharmaceuticals (10%), and Electronics (9%).

There is an increasing tendency to employ violence against drivers and security escorts in Mexico, with truck and semi-trailer operators being the most targeted. In fact, in Q4-2020, 56.6% of the incidents reported in this country were perpetrated using violence.

Mexico has maintained a downward trend in cargo theft since 2018. However, well-organized gangs continue to carry out large-scale operations and cause great losses to companies.

There is also a persistently high number of small-scale, opportunistic thefts that result in significant losses to companies.

The highest risks in Brazil: Hijacking in urban areas

In Brazil, high cargo crime rates are also a concern, although reported crimes in 2020, valued at US$233 million, are reduced in numbers over previous years.

In the 2020 Sensitech Annual Cargo Theft Intelligence Report from the SCIC for Brazil, hijacking was the modus operandi in 91% of the incidents, with 58% of the incidents occurring in urban areas, and 19% on highways. Goods in the Miscellaneous category were stolen most (42%), followed by Food & Drinks (17%), Tobacco (12%) and Electronics (8%).

As in Mexico, just because the number of reported crimes is lower, there are still ever-present risks. For instance, early in 2021, an executive from Brazil's National Association of Cargo Transport and Logistics (NTC & Logística), noted: "The numbers of cargo thefts in Brazil in 2020 reaffirm a downward trend in this crime over the past three years. This is due to the work of law enforcement agencies and the large investments made by carriers in risk management

Electronic freight security: The best choice for securing cargo

Many companies have chosen to put security measures into place at every leg of their logistics supply chain. As a baseline, they may start by using apps that track drivers or implement strict driver standard operating procedures. These steps are a good start but are limited. They offer little protection for the cargo itself and they do not assist in the recovery of stolen goods.

They are also ineffective when highly sophisticated criminals or gangs are involved.

Another option companies often use is the engagement of private escorts for the purpose of guarding the cargo throughout its journey. However, this option can be counterproductive—and costly. Private escorts are easy to spot, acting as beacons who send a strong signal that the cargo on board is a good target. Armed criminals can easily overtake escorts—as well as drivers—and they don't hesitate to harm or incapacitate anyone getting in their way. Not only is the cost of product theft high in these scenarios, but the potential loss of human life is immeasurable.

One of the securest ways to reduce risk

A comprehensive layered logistics security program that includes electronic freight security (EFS) is one of the best options for not only protecting cargo, but also for facilitating the rapid recovery of stolen shipments.

EFS programs provide a more cost-effective, multi-layered solution that includes:

- Real-time end-to-end cargo monitoring through embedded tracking technology and advanced analytics that help maintain supply chain integrity from one end of the chain to the other.
- Industry security best practices that are designed to outsmart criminals when and where they attempt to steal cargo the most, such as when cargo is on highways or moving through highly populated urban areas.
- Security compliance and pre-defined security protocols that are based by company-specific requirements, historic analysis, and proactive risk assessment reports.

As an example, a risk assessment could determine the degree of risk within specific routes and where the highest levels of cargo protection are needed.

- 24/7 live monitoring from regional command-and-control centers that ensure immediate action if there are any route deviations or other indications of a crime being committed. The personnel in a control center having existing relationships with local police and alert them as soon as any suspicious activity is detected.

Scenarios where EFS is imperative

Here is a quick look at the situations and circumstances that are the highest risk for cargo thefts.

The what...
High-risk products. Any commodity that has value on the black or grey market is a target today. Within sophisticated, organized crime networks, highly targeted products are easily resold locally, regionally, and internationally.

High-cost or hard-to-replace products. Companies that use just-in-time manufacturing can't afford the costly disruptions that come from stolen cargo. For an industry like pharmaceuticals, there are many costs associated with the theft of cargo, such as high replacement expenses. Research shows, for instance, that the total costs associated with a theft could cost a pharmaceutical company up to five times the value of the product itself.

Insurance requirements. Depending on the nature of the cargo, some insurance policies require that EFS practices be utilized on high-value products as a more secure measure of protection.

The where....
I**n-transit cargo.** As mentioned earlier, in-transit cargo accounts for the majority of thefts by criminals. Unsecured parking stops at gas stations, truck stops, and storage yards or facilities are also areas of concern, but the reported incidents in these areas are a fraction of ones attributed to hijacking.

Dangerous routes and hot spots. Companies that ship through known epicenters of criminal activity or via dangerous routes are more prone to cargo theft, as highly organized gangs typically have a strong network of thieves in these areas.

The when...
High-risk shipping times. Shipments on certain days, like Tuesdays and Wednesdays in Mexico, or during holidays are known to be of higher risk. Widely publicized new product introductions of high-interest cargo also invite greater risks of theft as well.

How EFS technology works

At the core of an EFS program are Internet-of-Things (IoT) and assisted-GPS monitoring devices that are covertly embedded in the cargo that are placed within cartons and pallets of cargo. These devices transmit real-time location, status and condition data that feeds a cloud-based advanced analytics engine where it is combined with software algorithms.

The analytics engine is constantly assessing shipment risk and generating critical activity alerts while the cargo is in transit or staged, mitigating the risk of cargo theft. The real-time analytics allow companies to evaluate shipment risk and generate escalations of potential security events before they become critical.

If cargo is stolen, recovery is much faster, as location data can be shared in real time with local law enforcement.

The most effective EFS solutions use technology that works in impaired environments where other GPS devices cannot. For instance, aluminum containers and cargo holds are some of the most challenging environments for data transmission, but not for sophisticated IoT solutions.

Multiple sensors ensure the greatest protection

Best-in-class cargo security combines various electronic security devices in one comprehensive program. For instance, companies often use devices that are enabled by different monitoring and tracking technologies. IoT-based devices can be combined with GPS-, cellular- and RFID-based ones to ensure a comprehensive multilayered security approach. Telematic devices that follow the location of the truck (versus the cargo) can also contribute to the effectiveness of an EFS program.

As an example, covertly placed GPS trackers inside cargo, trailers and containers can help recover cargo intact. The real-time accurate location coordinates from the trackers can be provided to law enforcement to help mitigate in-transit theft and facilitate successful recovery of the stolen goods.

When real-time IoT sensors are added on to a program with GPS trackers, companies can get in-transit location and condition data—including alerts of jamming activity, delays or disruptions—that is updated via cellular networks. Light sensors provide evidence of carton or door openings that may indicate tampering by cargo thieves.

Companies can also add covert radio-frequency identification (RFID) wireless sensors into customized customer-like packaging that enables collaboration with ground and helicopter response teams in high-risk regions.

Conclusion

The best protection for in-transit cargo in countries like Mexico and Brazil is a comprehensive electronic freight security (EFS) program, combined with a multi-layered supply chain security program.

ABOUT SENSITECH

Sensitech Inc. is a global leader in delivering supply chain visibility solutions. Our innovative monitoring products and services help to maintain the quality, integrity and security of our customers' valuable products at every step in their journey, all around the world. For 30 years, leading companies in the food, pharmaceutical, industrial, consumer goods and other industries have relied on Sensitech to help protect their products—and their bottom lines.