December 2024

TT

TT Club Loss Prevention

Supply chain security bulletin

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Supply chain security bulletin

This bulletin considers all aspects of supply chain security, highlighting TT Club claims statistics along with a range of other industry data providing an invaluable insight into the current risks facing those tasked with managing security through the supply chain. The Club has produced a number of reports and guidance documents related to this area of risk across numerous media platforms.

This bulletin will gather a selection of TT content and publications as well as highlighting collaborative work undertaken with other like-minded organisations in this space.

The entire library of TT's loss prevention guidance can be found at www.ttclub.com/loss-prevention and you are invited to email us at riskmanagement@ttclub.com or get in touch with your usual contact should you have any queries, ideas or suggestions.

Foreword

A common theme when considering supply chain security, is that the criminals behind the theft activity are getting smarter. They are leveraging technology to their advantage, and it appears continually gaining ground on legitimate stakeholders. Recent months have witnessed a spike in fraudulent activity across the United States with criminals using smoke screens afforded by web-based freight exchange or load boards. Able to mimic or pose as legitimate motor carriers the criminals have found ways to infiltrate the supply chain, identify their target and strike, often with complete impunity.

There have been more extreme cases where those behind cargo theft have used technology to block or jam GPS tracking devices and even cases whereby a recruited insider has placed a covert GPS device for the criminals so that they have full visibility of their target as it transits through the supply chain, affording them the opportunity to choose an opportune moment to strike.

In this edition of TT Club's Supply Chain Security Bulletin, we turn our attention to the latest advances in carrying equipment technology that can be considered to give supply chain stakeholders an advantage in the ongoing battle against the criminal fraternity. Smart containers have been touted for several years as the next generation of shipping container. Promising greater visibility, safety and compliance benefits, real-time tracking and a potential solution against illicit activity, we will explore several solutions and the impact that they could deliver.
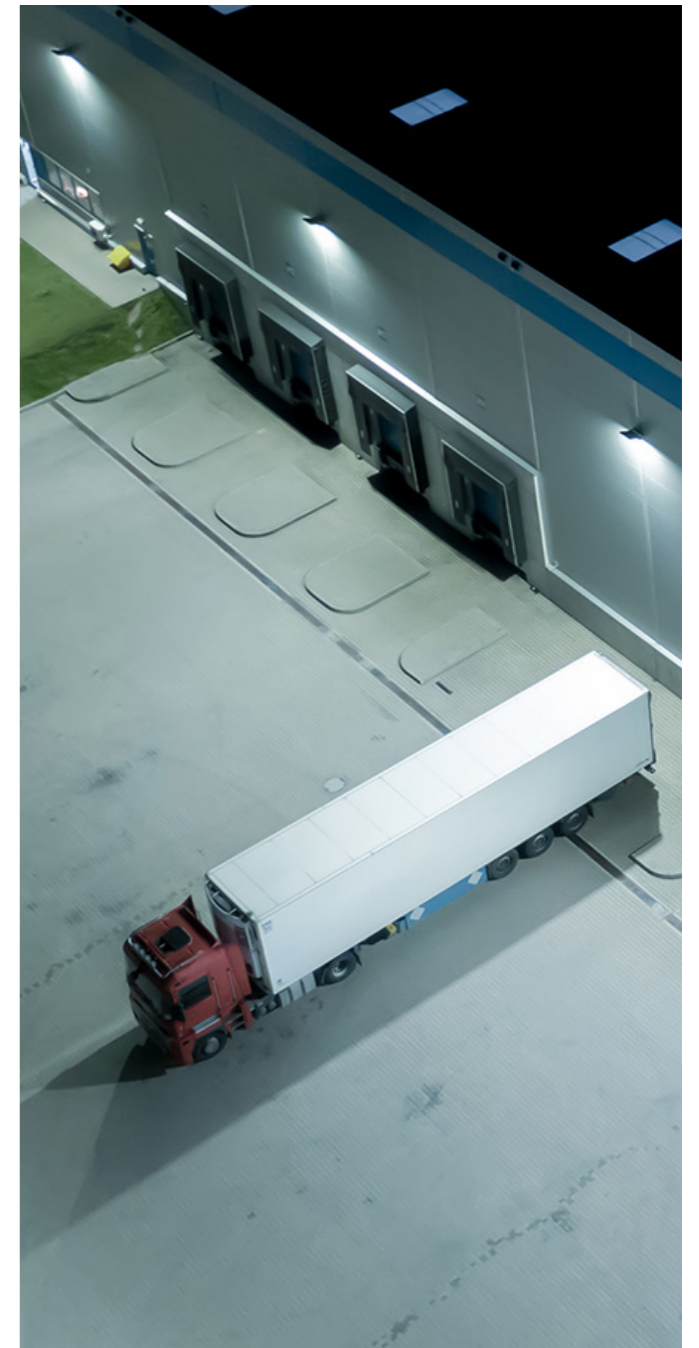
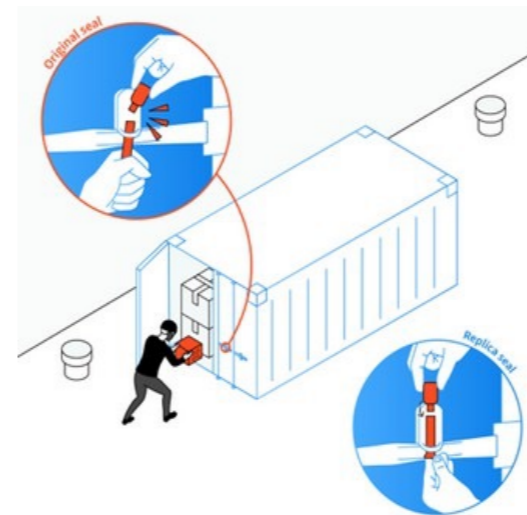# Containerised shipping: A new frontier for smuggling illicit goods

In recent years, drug trafficking via containerised maritime transport has increased considerably, particularly cocaine trafficking. In 2021, 2,026 tonnes of cocaine were seized worldwide, an increase of 42% compared with 2020. Pure cocaine production and coca cultivation have also increased significantly. Traffickers are increasingly exploiting containerised shipping due to the anonymity of containers, the increasing complexity of trade routes, vessel-sharing arrangements and the fragmented governance structure of the shipping industry.

Containers can be used to conceal large quantities of drugs, as evidenced by the record seizure of 11.5 tonnes of cocaine in Belgium in 2020. Given that inspections are rare, averaging around 2%, and the limits imposed by the European Union of 5% to maintain the fluidity of trade, traffickers take advantage of this weakness.

Cocaine trafficking routes begin in Colombia, Bolivia and Peru, where the coca is produced and chemically processed before being shipped via ports to Europe and North America. Traffickers also use alternative departure points and transit regions such as West Africa to evade tighter controls.

The most popular technique, called rip-on, only requires the traffickers to open the stuffed container by breaking the seal, throwing bags of cocaine inside the container and putting a replica seal in place. Other methods, such as stuffing drugs inside the cargo or in the container's structure are also used for smaller quantities.

A kilo of cocaine is worth between USD 1,500 and USD 2,200 in producing countries such as Colombia. By the time it reaches consumer markets in Europe and North America, it can be worth between USD 30,000 and USD 80,000, generating huge profits for traffickers.

Worldwide cocaine seizure quantity – 2020 & 2021

2020 **1,175 tonnes**

2021 **2,026 tonnes**

Top 10 countries by number of cocaine seizures and quantity seized (in kilogrammes), 2022–2023

2022   2023

Source: 2023 WCO Illicit trade Report

What means do we have at our disposal to shed light on these illicit and opaque practices and to put the brakes on them?
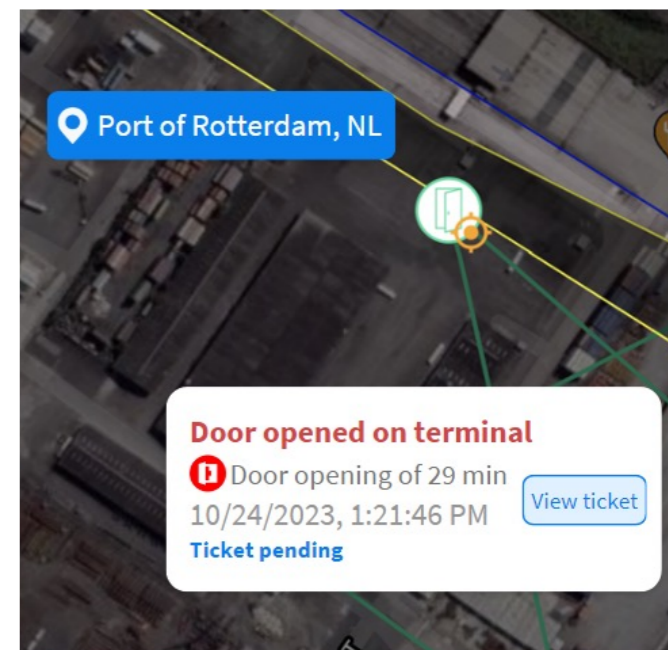
Enhancing cargo security with smart containers

Today, to secure the integrity of cargo, a container seal is required, but this measure is insufficient in the face of today's threats. Traffickers can remove and replace the seal without leaving a trace, or clone them. Customs inspections, based on profiling and risk analysis, are effective but limited by time and partial information. Detector dogs and X-ray scanners are also used, but their capabilities are limited by the volume of containers to be inspected and require highly qualified personnel.

Modern technological solutions, such as smart containers, offer increased visibility on the problem. These containers are equipped with sensors and antennae, enabling data to be collected and transmitted in real time. They monitor geolocation, movements, transport conditions and any door openings, facilitating the rapid detection of intrusions.

Shipping lines will be able to alert the relevant authorities in near real time and provide them with accurate information to prove their good faith.

Customs and port police, who are increasingly seeking non-intrusive inspections tools, will be able to allocate limited resources more efficiently. Not only will they be able to focus on high-risk containers and seize more drugs, but they will also be able to understand traffickers' habits by identifying the place, time and method of contamination.
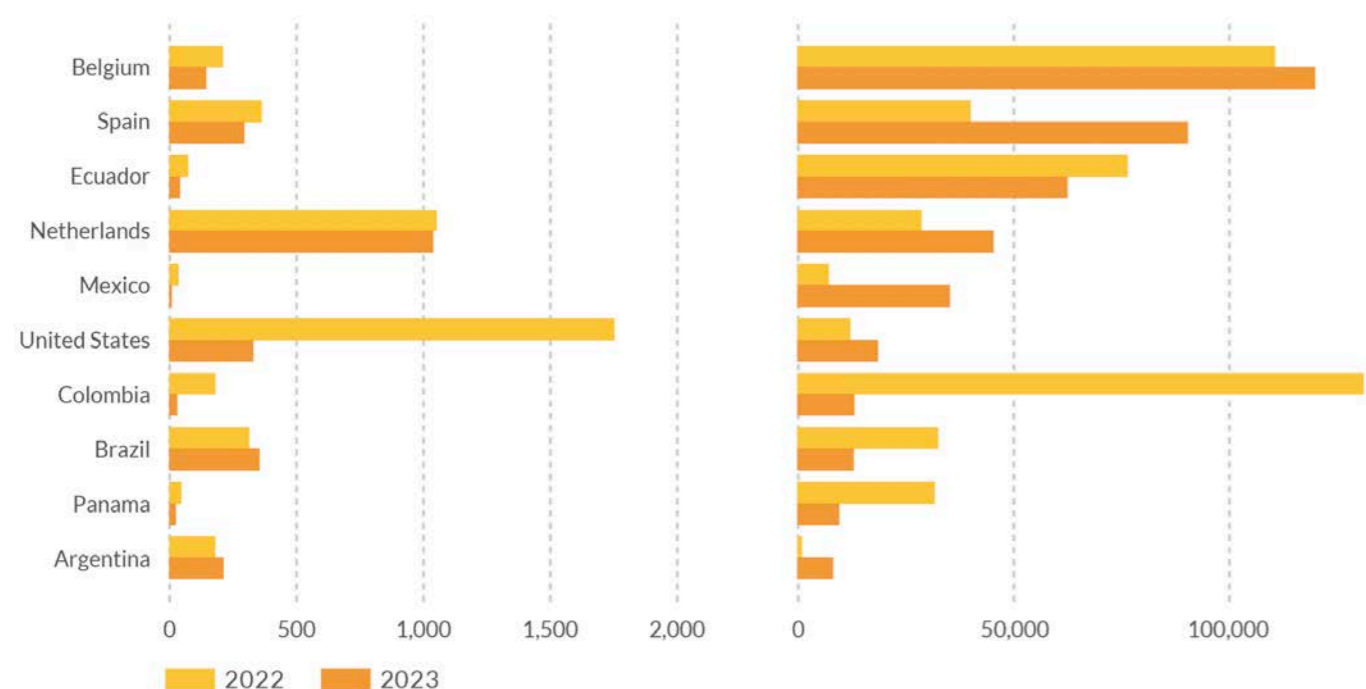
Traxens have developed a number of commercial packages providing cost effective options for their customers, including outright purchase and subscription models.

Port of Rotterdam, NL

Door opened on terminal
Door opening of 29 min
10/24/2023, 1:21:46 PM   View ticket
**Ticket pending**

TRAXENS

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TT's animated guide to preventing cargo theft

Having developed a thorough understanding of security vulnerabilities through the global supply chain, TT Club has developed a series of loss prevention animations with the aspiration of raising awareness of how thieves commonly access cargo.

One benefit of smart containers is the track and trace capability and near real-time status updates. In this animation we explore how false delivery instructions given to the driver can result in the delivery of cargo directly to the criminals. Real time updates on door opening, coupled with location sensitive data could serve to generate an alert to a central control tower and offer an opportunity to intervene before the cargo is off-loaded and stolen.

Video: Supply chain security – False delivery instructions (ttclub.com)

See the complete loss prevention animation series here.
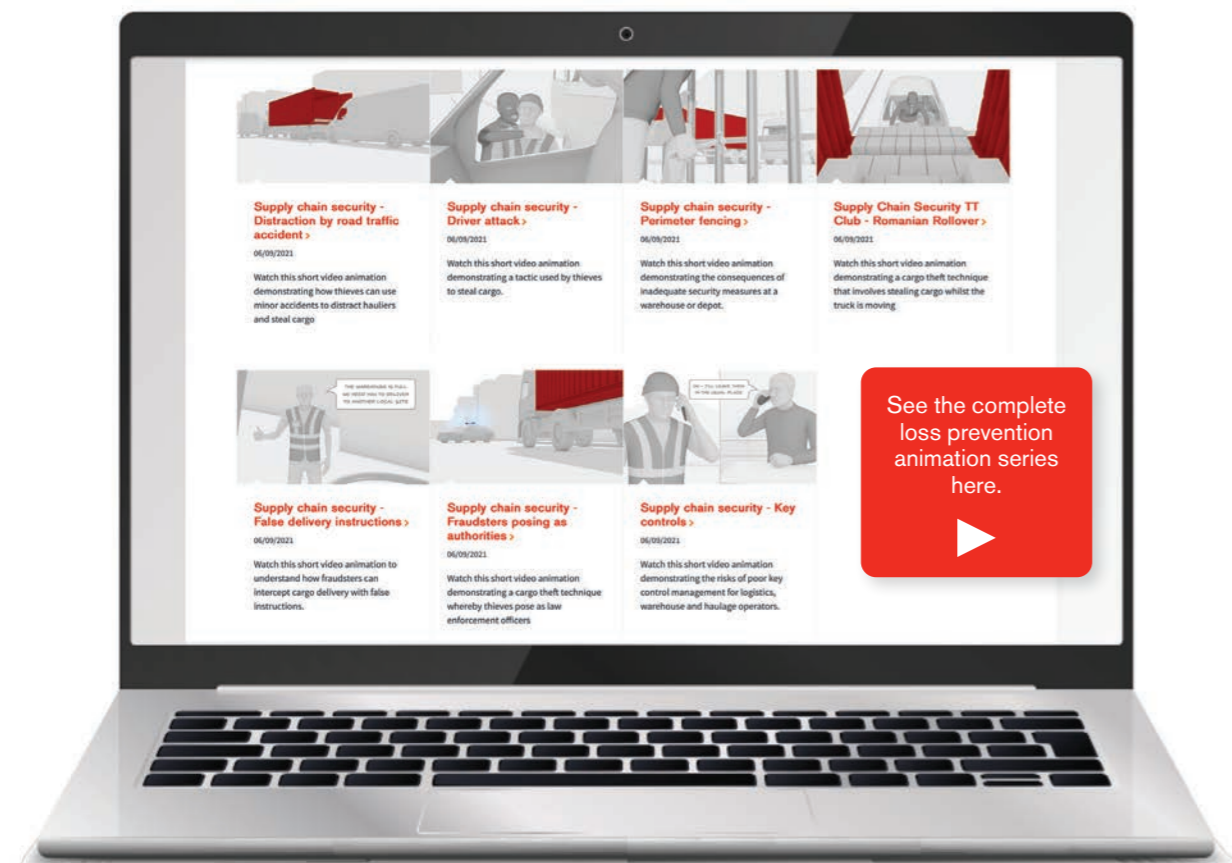
TT Live – Supply chain security series

TT Live | A TT Club loss prevention podcast

Mike Yarwood, TT's Loss Prevention Managing Director, hosts a highly informative podcast series that delves deep into the critical aspects of supply chain security.

This series covers a wide range of topics, including the pervasive issue of cargo theft, strategies to combat this threat, and various mitigation techniques. Mike also explores the importance of secure truck parking and the significant risk posed by insider threats within the supply chain.

In each episode, Mike welcomes guests who bring their expertise to the table. Notable guests include David Fairnie from BSI Supply Chain Security Services and David Thompson from Signum Services, UK P&I Club. These experts share their insights on topics such as depot security and the insider threat, providing valuable strategies and solutions to enhance supply chain security.

Episode 1: A persistent threat to the global supply chain – Cargo crime overview
CLICK BELOW TO LISTEN

Episode 2: Combating fraudulent cargo theft tactics – Fraud
CLICK BELOW TO LISTEN

Episode 3: Securing transport depots against cargo thefts – Depot security
CLICK BELOW TO LISTEN

Episode 4: Common cargo theft strategies and mitigation techniques – Cargo theft strategies
CLICK BELOW TO LISTEN

Episode 5: Mitigating the insider threat in supply chain security – Insider threat
CLICK BELOW TO LISTEN

Episode 6: The importance of secure truck parking in supply chain security – Secure parking
CLICK BELOW TO LISTEN

Mike Yarwood
Managing Director Loss Prevention, TT Club, London

Mike Yarwood is a Chartered Fellow of the Institute of Logistics and Transport, a Technical Specialist Member of the Institute of Risk Management and a Member of the Chartered Insurance Institute.

David Fairnie
Principal Consultant – Supply Chain Risk Management and Resilience – EMEA, BSI

David Fairnie brings expertise in managing global supply chain security, corporate social responsibility, and business continuity threats. He has worked across both the public and private sectors to support organizations in managing risk throughout their supply chain.

David Thompson
Signum Services London

David Thompson joined Signum Services in January 2013 following his retirement from the Metropolitan Police. Signum Services is the in-house investigative team that conducts criminal investigations on behalf of the Members of the TT Club, UK P&I Club, the UK Defence Club and ITIC.

AELER Unit One – the shipping container re-invented

Secure your cargo throughout its journey

With both digital and physical security, the AELER container has been designed to keep your cargo secure. Re-inventing the shipping container, the AELER Unit One 20ft container, made from advanced composite materials, offers unmatched strength and durability. Native insulation also protects cargo from temperature changes. Integrated IoT sensors enable near real-time tracking and monitoring for efficient logistics management.

Stay connected to your cargo's every move

Control Tower is the digital companion of the AELER Unit One container, offering near real-time updates on your cargo condition and position through a single, unified dashboard. Every change in the container is promptly reported, ensuring seamless and synchronised monitoring. The AELER Unit One container features powerful integrated IoT sensors that dynamically update data and provide immediate alerts to optimally track & trace your cargo and monitor its condition, including temperature, humidity, position, door opening events, and more.

Track your shipments for near real-time updates on a vessel's journey, even in open ocean. Get comprehensive, up-to-date shipping line information gathered from individual websites, including accurate vessel and port events, with updates on arrivals, loading, discharging, and departures.

Advanced delay alerts with predictive ETAs

Integrating data from sensors, shipping lines, telematics, and other technologies gives advanced notice of potential delays, before the shipping line even reports it.

Gain peace of mind for critical cargo

Whether your cargo is sensitive to temperature or at risk of theft, Control Tower provides proactive alerts whenever your shipment is at risk, so you can monitor if your products arrive safely at its final destination. Paired with AELER's live GPS tracking, you have complete visibility within our digital Control Tower to see when and where incidents have occurred, including real-time alerts of door opening or tampering, empowering you to take immediate action and manage your liability and protection.

Future developments

AELER's upcoming unique door locking mechanism is designed to minimize the risk of theft with a fully integrated system directly within the container door, requiring no additional installation. Concealed from the outside, this innovative mechanism enhances security by reducing the likelihood of tampering. By significantly improving container safety, it offers cost savings and greater peace of mind for cargo protection.

> **With both digital and physical security, the AELER container has been designed to keep your cargo secure.**

AELER

Naïk Londono
Co-founder and CEO

naik@aeler.com

> **Whether your cargo requires temperature control or is vulnerable to theft, Control Tower provides proactive alerts to safeguard your shipment when it's at risk.**
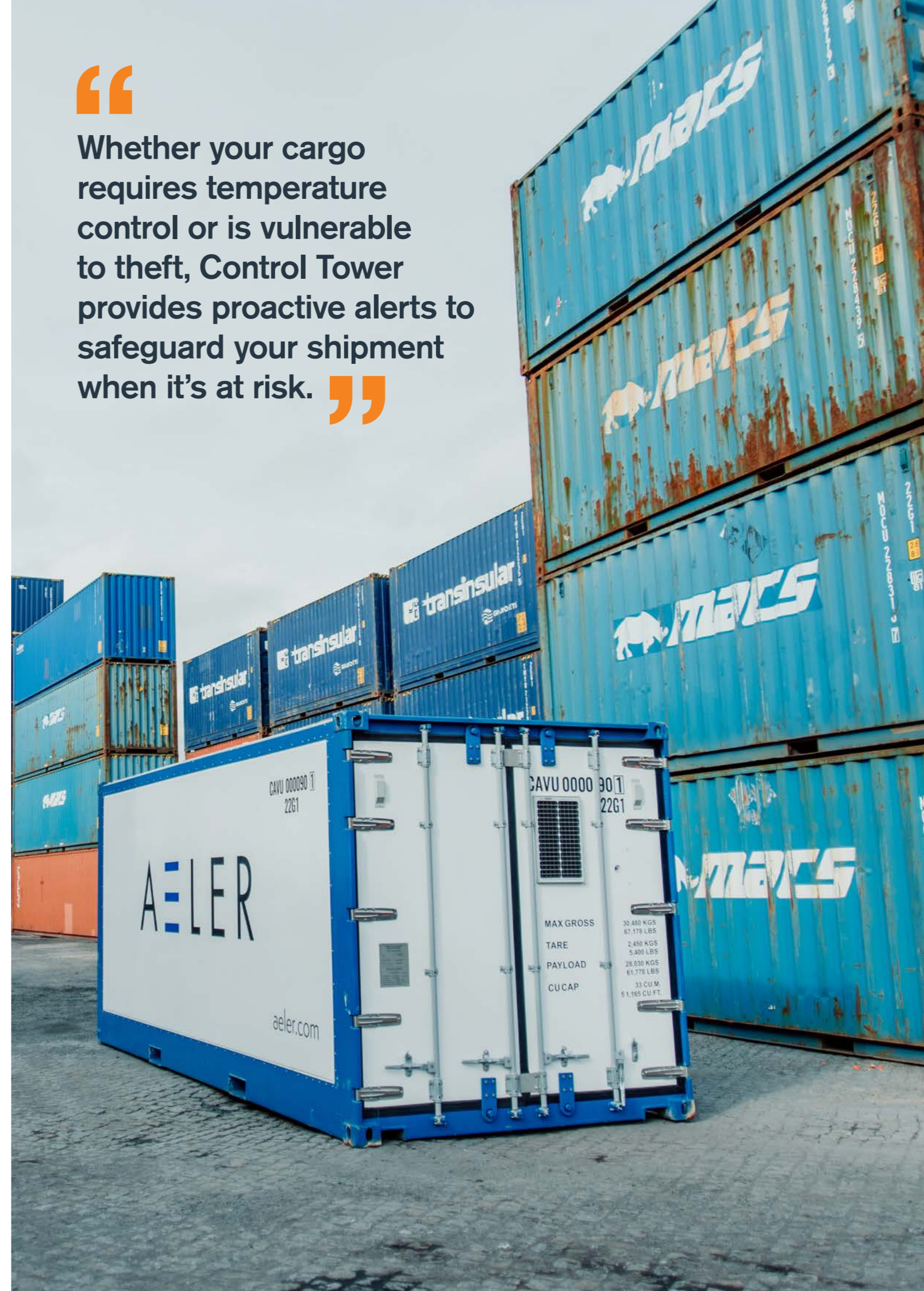
The rise of smart containers: A new era for cargo security

As with many risks, technologies and innovative solutions have the potential to mitigate exposure where strategically deployed. While arguably still in their infancy in the context of adoption and market penetration, smart containers are gaining traction in the industry with several operators making long term commitments to the technology.

The World Customs Organisation (WCO) SAFE Framework of Standards is designed to enhance security and facilitate global trade. It establishes a common set of standards supporting consistent practices. The framework promotes the use of smart security devices, including smart containers that can generate cargo status data in real-time. Such technology can enhance Customs control, providing continuous visibility throughout the supply chain.

The advantages of this technology are many, protecting the integrity of the cargo and disrupting the flow of illicit goods are both high on the list. However, in the context of security, these cargo transport units coupled with an efficient watch tower and software solution, could be a game changer. Some off-the-shelf features include GPS capabilities, affording real-time location services. Tampering and door open events can be identified, logged and notified and the ability to seal the container digitally.

The level of knowledge and sophistication of the criminals should not be underestimated. As new technology comes online, they will be aware of the challenges it presents to their activities. In the long term they will be considering how they can overcome those challenges, but in the short term it is likely that they will simply focus their efforts on the path of least resistance.

As with most criminal activity, deterrents are key. Making it physically more challenging to access the cargo will undoubtedly act as an effective deterrent, there will always be an easier target and therefore as the global fleet of smart containers grows, experience suggests that the criminals will target traditional cargo transport units rather than risk attacking a smart container.

Response is another key factor when considering effective deterrent. If the criminals elect to risk spending more time and effort accessing the smart container, what then? What is the response, where do the alerts go, how quickly does the response come, is it a physical response and is it linked to the authorities? These will all be considerations of the criminals and will ultimately determine whether they feel attacking a smart container is worth the risk. It will quickly become apparent if the response is weak, news will spread quickly and the deterrent will be lost.

Coupled with sensors and software that can identify small changes in light, atmosphere, temperature and gas levels smart containers arguably provide a safe space for the transport of cargo. The ability to identify a tampering event and raise an alert centrally will introduce another form of deterrent to the criminals, particularly where the movement of illicit goods is concerned. Such operations are obviously covert in nature, it would therefore be unattractive for the selected mule container to flag a discrepancy in transit, drawing attention.


WCO SAFE Framework of Standards

At TT Club we have seen numerous innovative security devices over the last decade, each with their own attributes and often developed to solve a specific challenge in a particular supply chain. Many of those solutions are effective in their own right, however there are a number of common challenges that innovators must overcome to ensure widespread adoption.

1. **Response.** Having a device whether it be a lock, a seal or a container that is capable of generating real-time alerts is only effective when coupled with a proportional response.

2. **Reverse logistics.** Many solutions come at a significant cost and are typically designed to solve a one-way transit. Once the cargo is delivered safely, who owns the security device, how can it be returned to the shipper?

3. **Sustainability.** Most solutions are not designed to be single use, ensuring that there is a means of further utilisation is of paramount importance.

4. **Power.** The last years have demonstrated that the supply chain can be unpredictable. Therefore ensuring that the device has sufficient power to continue operating effectively can be a challenge.

5. **Cost.** Naturally, as one would expect, innovative solutions will attract cost. Suppliers are exploring a variety of options from an upfront outright purchase to a subscription model whereby the manufacturer retains ownership of the solution, effectively providing a service to the user.

6. **Identifying the customer.** This has generated interesting debate, who is the primary benefactor? Is it the logistics operator, the freight forwarder, the shipper or the cargo owner? Answering this question is key for innovators to assess the potential market size for their solution.

7. **Where possible, collaborate, don't work in silo's.** Commercially, this is easier said than done, however there is great benefit to working collaboratively. By way of example, looking back at the last edition of this bulletin that featured smart seals as a concept, there would be benefit in the innovators behind those solutions to be collaborating with the innovators focused on smart containers.

> **These cargo transport units coupled with an efficient watch tower and software solution, could be a game changer.**
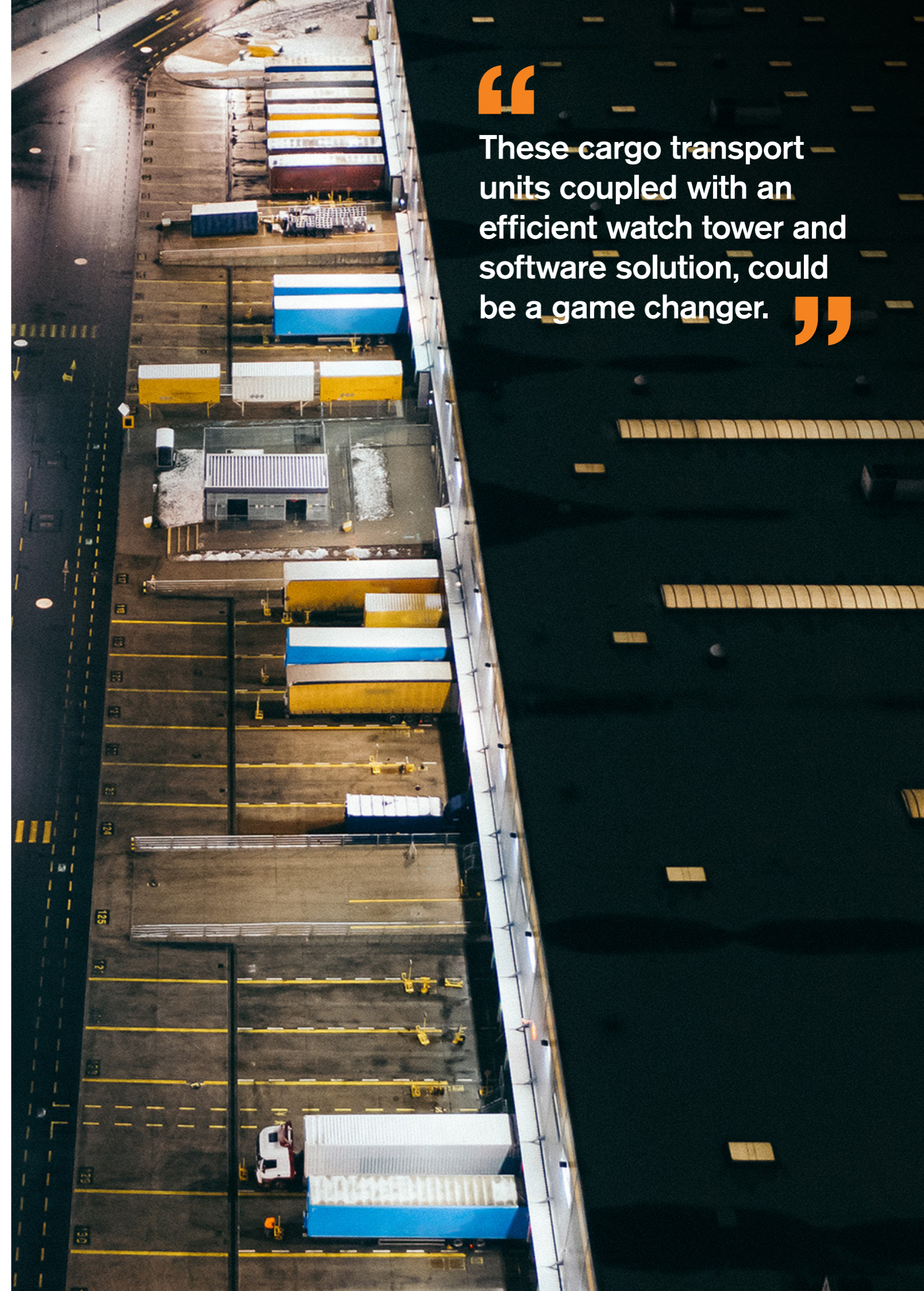
Regional focus: United States risk landscape

Claims statistics over the last three years show that the risk landscape in the United States continues to evolve. Cargo theft claims are being reported with greater frequency year-on-year. Year-to-date data for 2024 confirms a continuation of this trend having already eclipsed 2023 figures in terms of frequency and potentially by average claim value, once the data year is complete.

TT claims data also highlights several important trends over the last three years. California has consistently featured as the most frequently targeted state for cargo theft incidents in our data through the period, however alarmingly, this trend has become more prominent in 2024 YTD data, noting that 45% of theft claims occur in the state of California.

Texas, Florida and Illinois all feature towards the top of the list of States where cargo theft incidents occur, however in terms of a percentage of the whole, these states have become less prominent over the last three years.

The average loss value of reported claims increased significantly from 2022 (US$28,000.00) to 2023 (US$50,000.00) but appears to have plateaued in 2024 (US$42,000) noting that the data year is incomplete.

There was also a notable shift in the modus operandi in terms of how the criminals behind such thefts accessed cargo through the supply chain. The most frequently recorded type of theft across all three years was the theft of a full container or trailer from a cargo handling facility or depot. This type of crime however has witnessed an increase in frequency from 2023 (29%) to 2024 (49%). Many of these thefts have been the result of fraudulent activity and strategic theft whereby criminals purport to be a legitimate motor carrier or freight broker and duly arrange collection of the target trailer/cargo which is then stolen.

> " **California has consistently featured as the most frequently targeted state for cargo theft incidents.** "

Top 4 states claims 2022–2024

2024 YTD Pennsylvania **8%**

2022 California **36%**
2023 California **21%**
2024 YTD California **45%**

2022 Florida **11%**
2023 Florida **4%**
2024 YTD Florida **4%**

2022 Texas **11%**
2023 Texas **16%**
2024 YTD Texas **6%**
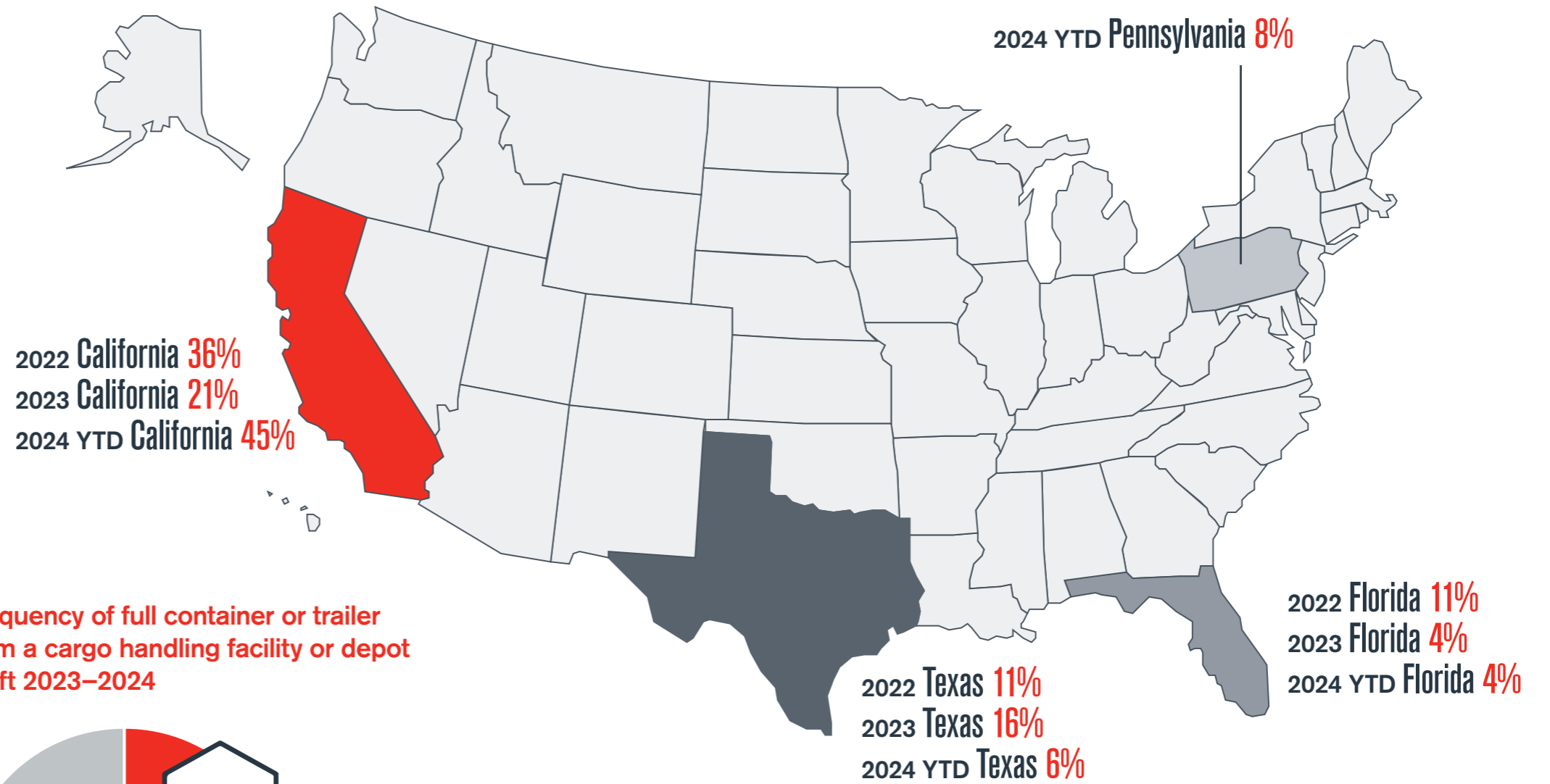
Frequency of full container or trailer from a cargo handling facility or depot theft 2023–2024

2023 29%

2024 YTD 49%
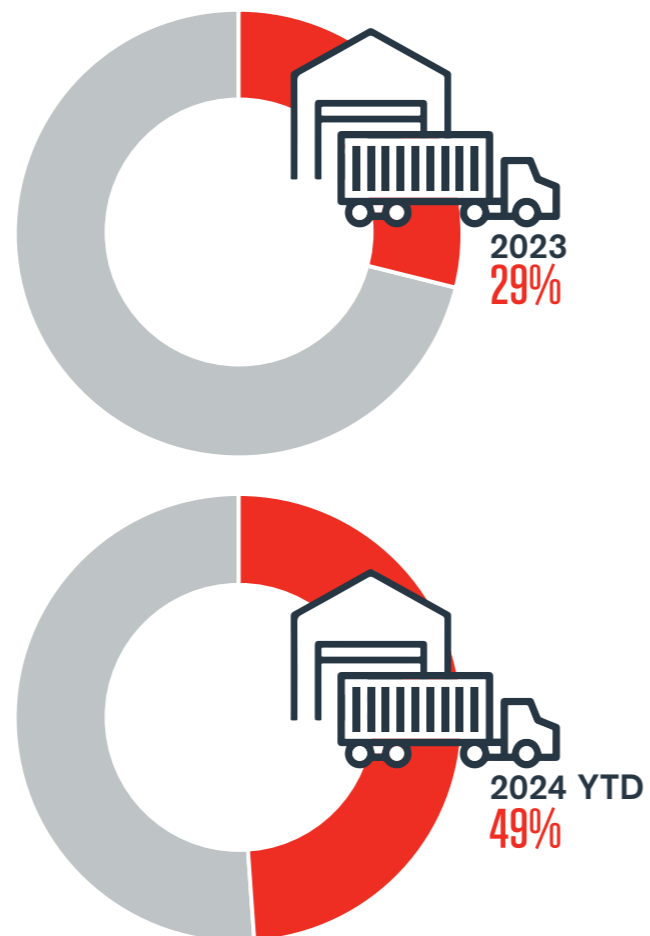
Total number of thefts 2022–2024

2022 — 96
2023 — 139
2024 YTD — 157
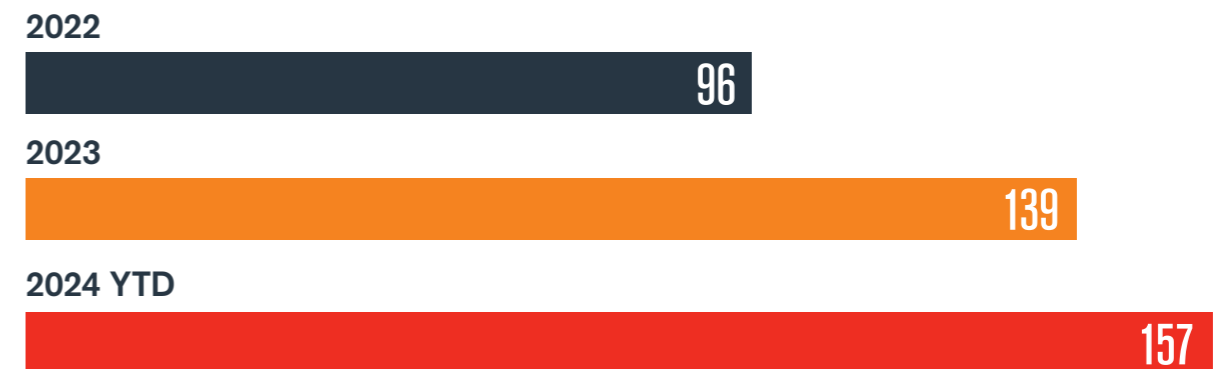
Guillermo Cancio is a Senior Claims Executive for Thomas Miller Americas based in New Jersey and handles TT Club Member claims. Guillermo has experience in a vast range of complex cases and sees first-hand the effects of these claims on individual businesses.