StopLoss
Truck driver safety

Mitigating operational risk related to visiting truck drivers

TT CLUB
IS MANAGED
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Contents

Acknowledgements

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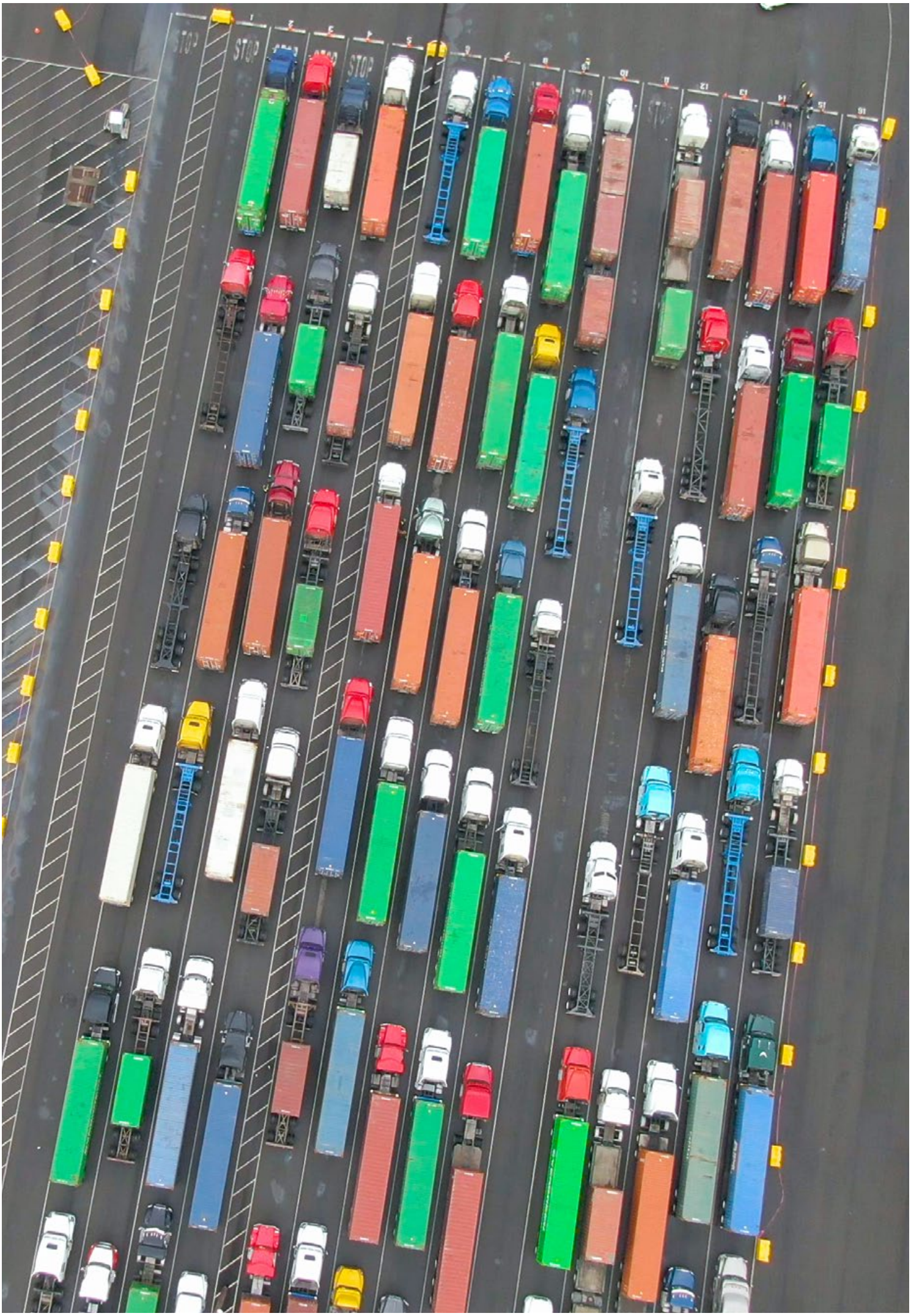
StopLoss series

StopLoss briefings are developed on a broad range of topics that give rise to recurring problems. They seek to provide a straightforward summary of an issue, essential good practice advice and, where applicable, sources of further information. The complete series and further information is available at www.ttclub.com/lossprevention and printed copies are available from the TT Club's Regional Centres.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How to reduce accidents caused by drivers leaving their trucks

Truck drivers are at their most vulnerable when outside the safety of their cabs. This StopLoss looks at the reasons drivers get out their trucks in operational zones and the risks they face as a result. It recommends procedures to avoid drivers unnecessarily leaving their vehicles and risk mitigation measures for when they need to do so.

Who is this for?

- Transport and logistics operators
- Warehouse operators
- Port and terminal operators

1

Introduction

Truck drivers, whether employed directly or indirectly as third-party employees, are an essential component in any logistics operation. They move containers, trailers and goods in every country across the globe. While differences exist geographically in working arrangements and vehicles, a common feature is that truck drivers outside their vehicles are at increased risk to a wide variety of hazards.

Common risk exposures for truck drivers include being near to handling equipment, other trucks and vehicles, and suspended loads where cargo is being lifted to and from their vehicles. Risks also include working at height and potentially in enclosed spaces. Once outside their vehicles, exposures increase: slip, trip and fall and pedestrian/vehicle collisions become a greater risk with the potential for serious injury and fatalities.

Whether you are a port, terminal, logistics or warehouse operator, there is a clear duty of care to protect all people that visit and work within your operation. Managing the safety of individuals who visit infrequently or who might be unfamiliar with your operation presents additional challenges.

Understanding truck drivers' operations, their working environment, psychology, needs, expectations and limitations while within your sites is prudent to being able to manage the associated risks and protect these mobile workers.

This StopLoss identifies common risk exposures for truck drivers outside their cabs, explores the reasons they exit their vehicles and offers practical guidance to mitigate the risks.

> **there is a clear duty of care to protect all people that visit and work within your operation**

2

Understanding behavioural risks

In this section:

- Reasons why drivers leave their vehicles
- Understanding drivers' needs and cultures

2.1 Risk overview

Risk naturally emerges in situations where people work close to machinery. Drivers of commercial vehicles inevitably face risk whenever they leave their cabs, regardless whether they do so at a container terminal, a customer delivery point, logistics terminal or warehouse.

Many sites correctly seek to limit the risk to drivers by attempting to prevent them from exiting their vehicles at all. However, there are reasonable and valid reasons why drivers exit their vehicles.

Operational requirements may dictate it is necessary, for example, when a driver has to couple or uncouple with a trailer or chassis. Sites must recognise when it is necessary for drivers to exit their vehicles and seek to mitigate these risks.

It is often when things do not go to plan, however, that drivers feel they must leave the safety of their cabs. Drivers who are left waiting for extended periods may leave seeking information or an ambitious driver may even set out looking for the container or trailer they are due to collect. Drivers might also attempt to assist crane operations by guiding cargo into place. Malfunctioning equipment may force a driver to exit the vehicle to attempt to correct the malfunction or to seek assistance. Drivers who are unfamiliar with a site may become lost and need directions.

Additionally, although they may not be directly employed by a site, drivers have the same personal needs as employees and may leave their vehicles seeking welfare facilities.

> **there are reasonable and valid reasons why drivers exit their vehicles**

2.2 Understanding driver needs and cultures

To mitigate the risks to drivers who exit their vehicles, it is necessary for sites to understand the world as it is seen through the eyes of those drivers and to provide solutions to the problems they face.

Potential language barriers are important to consider; many sites have to deal with drivers from other countries who may not speak the local language. It is critical to assess potential risks and ensure effective communication methods are in place.

It is also important to recognise how culture influences the behaviour of drivers. Large ports and logistics operations receive drivers every day who are employed by operations with different ideas about safety. Drivers may be required at some sites to exit their vehicles and assist with the operation and may resent being told they are not allowed to do so.

Some have been working in the industry for many years and may resent the encroachment of what they consider to be increasingly restrictive health and safety regimes on an industry that traditionally offered a lot of freedom. Some may simply be complacent or wilfully obstructive.

Sites must not lose focus of what they are able to influence and control. The culture of the receiving site is what will determine the response to the behaviours described above. A site that has a fully embedded health and safety regime will be able to respond appropriately and limit dangerous behaviour.

3

Building a safety culture

In this section:

- Risk assessments for drivers
- Importance of clear communication
- Robust training protocol

3.1 Risk assessment as mitigation

Crafting safe and secure operating procedures relies on a robust risk assessment process. Many sites recognise it is important to assess risks of operational processes carried out by direct employees, but an expanded scope of risk assessment is necessary for third parties such as drivers.

Sites without direct responsibility for drivers of commercial vehicles might fail to account for their activities or adequately assess the risks of the processes they carry out.

When assessing the risks to drivers, consider this fundamental question: for a given work activity, is it safer for the driver to remain in their vehicle or to exit their vehicle? Different sites will answer this question differently, but it is essential that the decision is informed by a thorough risk assessment.

Keeping the driver in the cab

The cab is often the safest place for a driver to be. Many sites seek to mitigate the risk to drivers by creating procedures that rely on the driver remaining in the vehicle. Where this is the case, it is necessary for sites to communicate this expectation and enforce it. Training of equipment operators not to move unless the driver is in their vehicle could be one solution. There are a range of emerging artificial intelligence and machine learning technologies that can be deployed to identify drivers who are present in the operational zone. It should not be assumed that drivers will know the right thing to do, as different sites mitigate risks in different ways and drivers may be used to different processes.

The site communication plan should address this aspect of site communication, which includes signage as well as direct communication with drivers. Site managers and supervisors should seek to anticipate the reasons why drivers do not remain in their cabs to ensure adequate enforcement of the site rules.

A safe space for drivers

What is a safe area?

- Clearly defined area
- Protected area from vehicles
- Convenient location
- In sync with traffic management plan

Where the risk assessment determines it is too dangerous for drivers to remain in their cab (for example where there is a risk of crushing during loading), sites should seek to mitigate the risk by creating a safe space for drivers to wait until the risky procedure has finished.

Again, this must be communicated and enforced by the site, but the risk assessment should also consider how the driver will reach the safe space and how to ensure the driver remains there until the operational procedure has finished.

3.2 Visitor induction and training

Providing training to everyone who comes onto site can be challenging, particularly in the case of visiting drivers. Potential language barriers should again be a consideration to ensure accessibility. Subcontracted drivers are often swapped at the last minute. They may arrive in a rush to leave and may resent being asked to complete training if they fail to see its value.

Drivers encounter risk before they even report to the transport office, and thousands of drivers may visit a port or terminal each day. Nonetheless, despite these challenges, well-run sites do ensure training is provided to visiting drivers which can mitigate risk.

Many ports overcome the safety challenges by requiring drivers to complete a short certification course, complete with a test, before they are allowed to enter the site. This allows the site to familiarise drivers with the site layout as well as important safety information before they arrive on site. Certified drivers are then issued with a permit to enter the site.

Drivers who are not certified are refused entry. This also encourages businesses to send the same drivers repeatedly, reinforcing safety through repetition. Training is refreshed at regular intervals, keeping certification fresh and relevant as sites inevitably improve and update safety rules and procedures.

Sites must recognise that training drivers is only the first step to keeping them safe. The most well-structured safety regime is of little use if enforcement of the rules and procedures is lacking. Sites must confront drivers who do not follow the rules and enforce expectations, even when doing so requires removing drivers from site. Consideration should be given to establishing a system whereby drivers who persistently fail to adhere to site rules have their access rights revoked. This can prove challenging, particularly for large sites such as ports and in transport yards, where supervision by managers and supervisors is limited.

4

Common risks and mitigation

In this section:

- Common direct risks to drivers
- Indirect factors that increase risk
- Mitigation strategies
- Example scenarios

Common direct risks

Detailed analysis of driver-out-of-cab incidents reveals there are common themes of risk that appear repeatedly.

Descriptions of these common direct risks are shown in the following table along with suggested mitigation strategies. A lack of consistent enforcement of policies and procedures may contribute to the risks described in the table below. Recognising that every site will be different, a bespoke risk assessed traffic management plan is a critical risk mitigation tool.

Risk category	Description	Mitigation strategies
Struck by moving vehicle or plant equipment	Drivers face inherent risks from operating near heavy machinery and vehicles, which can vary significantly across different sites. Drivers may also contribute to these risks (for example vehicle roll-away incidents) due to site-specific factors.	Development of traffic management plan. Implement strict vehicle control measures (for example handbrake use) to prevent roll-away incidents. Provide comprehensive site-specific training to drivers on machinery risks and safety protocols. Enforce and monitor compliance with safety procedures, including vehicle immobilisation protocols.
Struck by collapsing cargo	Cargo loading and securing practices pose risks to drivers, who often have limited control over cargo handling. Operations must ensure proper cargo management and securing to protect drivers from potential hazards associated with shifting or collapsing cargo.	Establish clear cargo handling protocols and procedures to minimise risks during loading and unloading. Provide training to drivers on recognising and reporting unsafe cargo conditions. Ensure enforcement of policies that protect drivers during loading operations (for example remaining in vehicles during loading or remaining in a defined safe area).
Slips, trips and falls	Drivers are vulnerable to slip, trip and fall hazards in transport yards and other operational areas. Consider working at height risks particularly where drivers are working on the bed of their trailer or container. Site managers may overlook these risks, focusing primarily on warehouse safety. Weather conditions can exacerbate these risks, especially for drivers performing coupling or uncoupling tasks.	Conduct regular inspections and maintenance to keep transport yards and operational areas free of hazards. Monitor compliance with the wearing of personal protective equipment and where appropriate issue temporary equipment. Raise awareness among site managers about the importance of yard safety for all personnel, including drivers.

Indirect factors that increase risk

While they may not constitute direct risks, there are many contributory risk factors that increase the likelihood that a driver out of their cab will be involved in an incident.

The factors described in the table below are not unique to one type of operation. Addressing these factors through the proposed mitigation strategies is key to reducing the risk of all types of incidents.

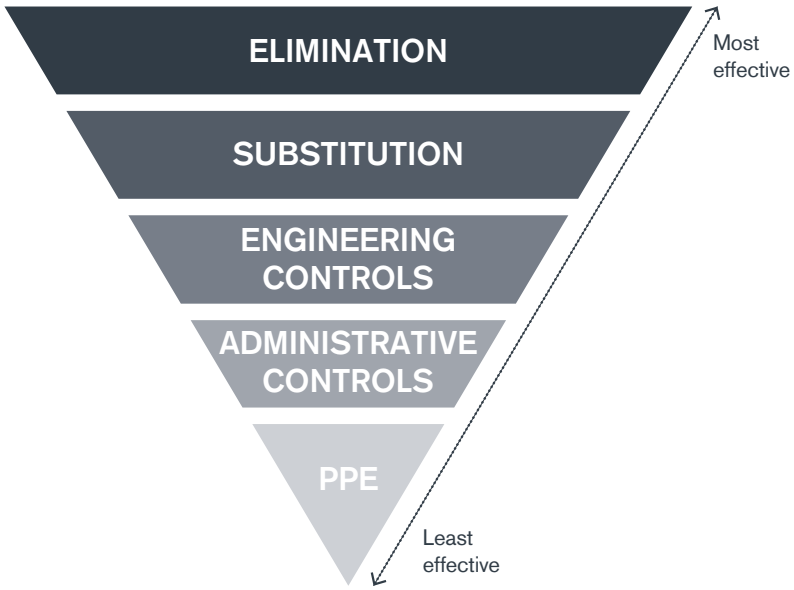
Risk category	Description	Mitigation strategies
Congestion, disorganisation and long waiting times	Congested and disorganised yards and warehouses create hazardous conditions where drivers and pedestrians are at risk of collisions due to blind spots and obstructed pathways. The dynamic nature of congestion leads to shifting risks that are unpredictable for infrequent visitors.	Implement regular yard and warehouse inspections to identify and address congestion and disorganisation. Enforce strict traffic management rules and pedestrian segregation measures. Provide comprehensive site orientation for drivers to familiarise them with changing risk areas.
Poor maintenance regimes	Inadequate equipment maintenance contributes to mechanical failures that can lead to incidents, such as collapsing loads or injuries from malfunctioning equipment. Workers should be empowered to report and cease using defective equipment promptly to prevent accidents.	Establish rigorous equipment inspection and maintenance schedules. Encourage a proactive reporting culture where workers promptly report and address any equipment defects. Provide training to drivers and workers on equipment safety protocols and the importance of routine inspections.
Poor safety culture	A culture that recognises the importance and value of safety and promotes compliance with safety protocols will foster an environment where safety concerns can be raised and addressed promptly. Conversely, a complacent culture leads to increased risk-taking behaviour.	Foster a strong safety culture through leadership commitment and employee engagement. Conduct regular safety training and awareness programmes for all personnel. Encourage open communication and empower workers to report safety concerns without fear of reprisal. Lead by example, with management demonstrating and prioritising safety in daily operations.
Weather-related risks	Weather conditions, such as icy walkways and wet catwalks on tractor units pose specific risks to drivers performing coupling and uncoupling tasks. Of equal importance is extreme heat, does this increase the likelihood of drivers exiting their vehicle? Site preparations often overlook these areas critical to driver safety.	Include specific weather-related safety protocols for drivers in site preparedness plans. Provide specialised training for drivers on working safely in adverse weather conditions. Review and update site policies to acknowledge and address the unique risks faced by drivers in various weather conditions.

General mitigation strategies for all sites

There is no perfect response to the direct risks and contributory risk factors outlined. Each operation is unique and faces a unique set of risks, though many will fall into the categories outlined in these sections.

There are, however, strategies that can limit the risk sites face if they are adapted to those unique circumstances. They are described in the table below in a generalised way to emphasise they are steps all sites can consider when seeking to limit the risk to drivers when out of their cabs.

The Hierarchy of Controls



Safety strategy	Description
Segregate the loading zone	Implement physical barriers or safety devices to keep drivers away from loading areas during operations. Utilise technology like artificial intelligence for automated safety measures based on human activity detection. Design fail-safe procedures where safety features cannot be circumvented, aligning with the principle of eliminating human error.
Create a traffic plan	Develop traffic plans that prioritise segregating pedestrians and vehicles using physical barriers where possible. Implement one-way traffic systems and traffic management tools like traffic lights. Designate safe areas where activities such as locking twistlocks can be performed.
Create a communication plan	Ensure clear and consistent signage, mimicking standard road signage. Provide drivers with access to online maps or digital resources for navigation. Establish effective communication channels. Keep drivers informed about delays or operational changes to minimise unnecessary exits from vehicles.
Maintain a culture of safety	Effective leadership is critical in establishing and maintaining a strong safety culture. Invest in maintaining tidy, organised transport yards free of obstructions. Safe working practices must be sacrosanct and robustly maintained regardless of operational pressures. Foster a strong safety culture among workers. Involve workers in health and safety initiatives, including site tours, near miss reporting and safety meetings.
Contingency planning	Undertake a risk assessment considering the likelihood of a variety of scenario's where things don't go to plan, such as a mis-seated container. Where should a truck driver report to? How would they get there? With whom should they communicate. A clearly defined and communicated problem resolution zone, could result in fewer truck drivers exiting their vehicle seeking assistance. Clear contingency planning will reduce the propensity for drivers to self-help.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Example scenarios

Outlined here are four scenarios detailing common risks to truck drivers. Each scenario identifies the relevant steps for mitigation as detailed in the preceding pages.

4.1 Delivery at a logistics hub

Things don't always go to plan

A subcontracted driver arrives for the first time at a busy logistics hub at night after a heavy snowfall to drop off a container they have just collected from a port. After dropping the container, the driver is scheduled to uncouple the chassis and collect a trailer for delivery to another warehouse nearby. On arrival the driver finds that they cannot hear what is said through the intercom at the barrier. They exit their vehicle and duck under the barrier to find someone to speak to, as a shunt vehicle passes closely by.

After entering the site, the driver attempts to park in the signposted waiting area, but it is full of waiting vehicles. They proceed further and park in a corner of the yard near the driver reception. While walking across the yard to the office a contractor's van drives across their path.

The driver is directed to a drop-off point but the signage is covered in snow. The driver exits their cab again to ask a forklift operator exactly where it is, causing the forklift to stop suddenly and drop a case of bottles.

The driver finds the drop-off point and gets out of the cab to uncouple the chassis but slips on the top step of the tractor unit and nearly falls. The driver then collects the curtain-sided trailer and while securing the load restraint straps, must duck when the curtain pole swings free in a gust of wind.

Risks

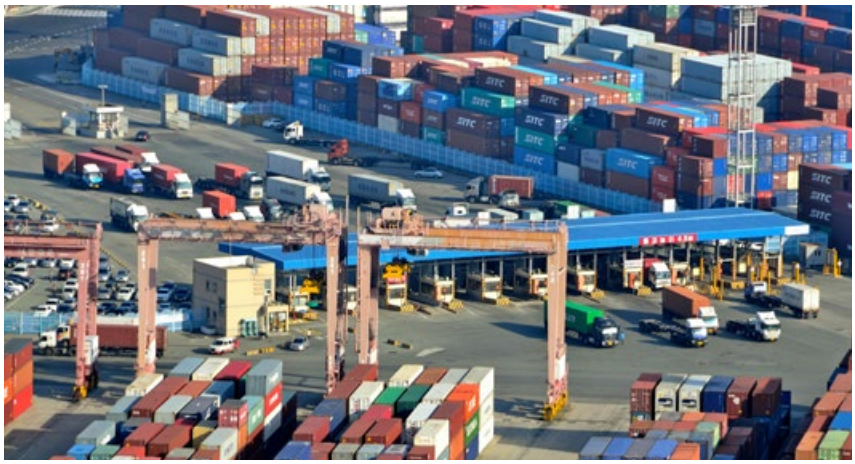
Driver struck by moving vehicles or plant quipment

Driver struck by collapsing cargo

Driver slips, trips and falls

Possible mitigation

- Create a traffic plan with adequate parking and safe pedestrian access
- Define procedures for drivers exiting vehicles
- Loading procedure to ensure no pedestrians (including drivers) are present
- Housekeeping to prevent trips, slips and falls
- Trailer preparation procedure, including securing doors and curtains to avoid sudden movements
- Create a communication plan for drivers from gate to exit
- Communicate delays to drivers to minimize driver wandering



4.2. Free-flowing aggregate delivery to a construction site

Consider adverse weather conditions

An articulated tipper driver arrives at a construction site with a load of gravel, with instructions to tip it at a particular silo. The ground and the cargo are wet following heavy rain. The driver sees some rough ground ahead so gets out of the cab to check whether there is sufficient clearance, but trips on loose stones. While waiting for the silo to receive the load, the driver walks to a nearby site hut to find a drink of water and walks across the path of a large truck. The driver gets back in the cab and starts raising the trailer bed, but the truck nearly rolls over due to a combination of sloping ground, misalignment of tractor and trailer, and the moist gravel not sliding freely from the trailer bed. After repositioning for better stability, the gravel load is still stuck so the driver gets out and dislodges it with a pole which causes a sudden discharge of the cargo.

Risks

Topography

Weather conditions

Raising the cargo space

Possible mitigation

- Traffic planning for bulk operations
- Vehicle positioning
- Safety protocols during tipping
- Procedure development for free-flow bulk products

4.3 Breakbulk collection

What happens when safety culture breaks down?

A driver arrives at a familiar warehouse to load steel coils. While reversing, the driver hits a bollard protecting a newly moved goods-out desk and damages a taillight. The driver readjusts and parks correctly, contrary to loading area rules, the driver gets out to chat to warehouse team members, who the driver has known for many years. To complete the load, the crane operator lifts and swings the final coil towards the trailer, knocking an already loaded coil off the trailer onto the floor. The driver then climbs on to the bed of the trailer to re-position the chocks.

Risks

Congestion and disorganisation

Training and awareness

Poor safety culture

Possible mitigation

- Enable a safe working environment
- Ensure equipment is in good repair
- Encourage near miss reporting
- Conduct regular site tours

4.4 Delivery of a container at a container terminal

The importance of communication

A driver arrives at familiar container terminal to deliver a loaded container. Due to a shift changeover and toolbox meeting for all terminal personnel, the driver is left waiting at the required bay for 25 minutes without communication. The driver walks back to the security gate to find out the reason for the delay without a high visibility jacket. Suddenly the terminal is up and running again and to get back to the truck the driver must negotiate past several external trucks, operational reach stackers and rubber tyred gantry cranes.

Risks

Struck by moving vehicle or plant equipment

Struck by falling containers

Slips trips and falls

Possible mitigation

- Create a traffic plan
- Define processes
- Loading/unloading procedure
- Housekeeping
- Create a communication plan

5

Case study

Safe traffic flow at Norfolk International Terminals (NIT), Norfolk, VA, USA

As this report has demonstrated, there are many factors to consider when designing a safe working environment for drivers, particularly in operations that commonly receive drivers who are unfamiliar with the site. TT Club has seen many examples of operations that have adapted technology, processes and infrastructure to improve driver safety. The Port of Virginia's private terminal operating company, Virginia International Terminals (VIT) has implemented a highly-efficient operational model heavily focused on limiting the risk to drivers who are required to exit their vehicles during the loading process. The team at NIT has fully considered traffic flow, driver communication and training, and segregation of humans and machines and the result is an operation that is safer for the workforce as well as more efficient and cost effective.

Outline of operation

At Norfolk International Terminals, one of the port's two primary container terminals, drivers enter the terminal through a gatehouse, outlined in a green box in Figure 1. All drivers must undergo online training before they are allowed to enter site, which lets them know what they can expect while they are there.

After entering the site, the vehicle is guided by clear and consistent signage to the area outlined in green. This area can be seen more clearly in Figure 2. This area consists of 60 waiting lanes. Each lane has full visibility of the loading zone and the entire waiting area is fully visible from a control tower. At the front of each waiting lane is a communication box that enables the driver at the front of the queue to communicate with the control tower as necessary. Communication with the control tower is not always necessary, as the terminal has implemented a system of RFID tags for visiting vehicles. The communication box is able to receive a signal from the RFID tag in the vehicle and allocates the driver to the correct loading point.

Figure 1

While the queuing zone initially appears to require a large amount of space, this strategy of organising traffic flow has almost completely eliminated queues of traffic outside of the queueing zone. Prior to implementation, the site reports that queues of waiting vehicles used to stretch around the port and traffic built up on the roadway outside. The queueing zone also has the additional benefit that drivers are able to contact the control tower using the communication box with any issues or queries, eliminating the need for drivers to exit their vehicles in situations where things don't go according to plan.

When the operation is ready to load the vehicle, the driver is instructed to pull into an allocated loading lane. Once the vehicle is ready for loading, the driver is required to exit the vehicle and wait in a barricaded area, as seen in Figure 3. The waiting areas are all monitored automatically using pressure plates. If the driver steps off of the pressure plate during the loading process, then the RTG crane ceases operation. After the container has been loaded on the chassis and the crane ceases operation, the driver may enter the loading area and engage the twist locks.

Through effective implementation of a well-designed strategy, the team at NIT has implemented an efficient operational model focused on minimising risks for drivers exiting their vehicles during loading. The NIT team has addressed traffic flow, driver communication and training, and the segregation of humans and machines, reportedly resulting in a safer, more efficient, and cost-effective operation. Drivers undergo online training before entering the site, are guided by clear signage, and use communication boxes and RFID tags to streamline the loading process. The queuing zone has significantly reduced external traffic queues, and the use of pressure plates in waiting areas ensures driver safety during loading. Since wating vehicles are held in a row of lanes instead of a road winding through the terminal, a control tower is able to keep a watchful eye on the entire area and intervene when things do not go according to plan. This comprehensive approach exemplifies how thoughtful design and technology can create a secure and efficient working environment for drivers.

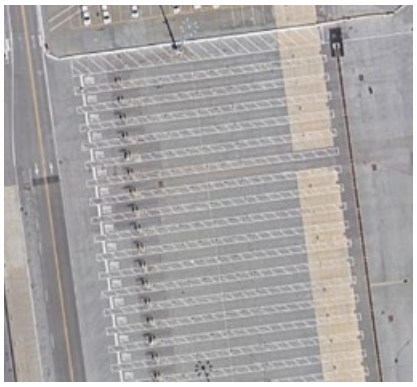


Figure 2

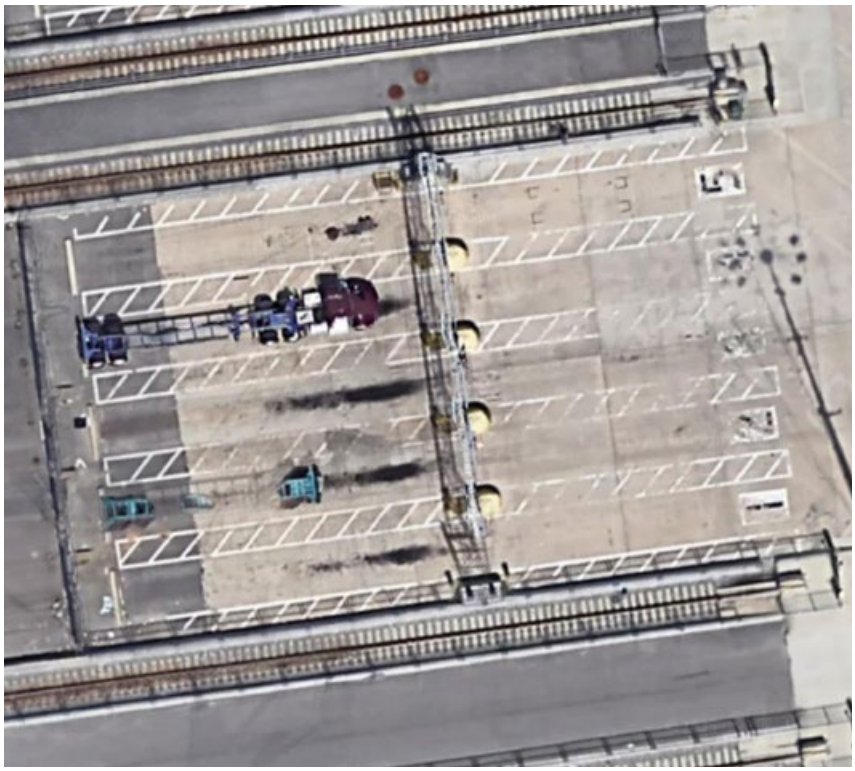


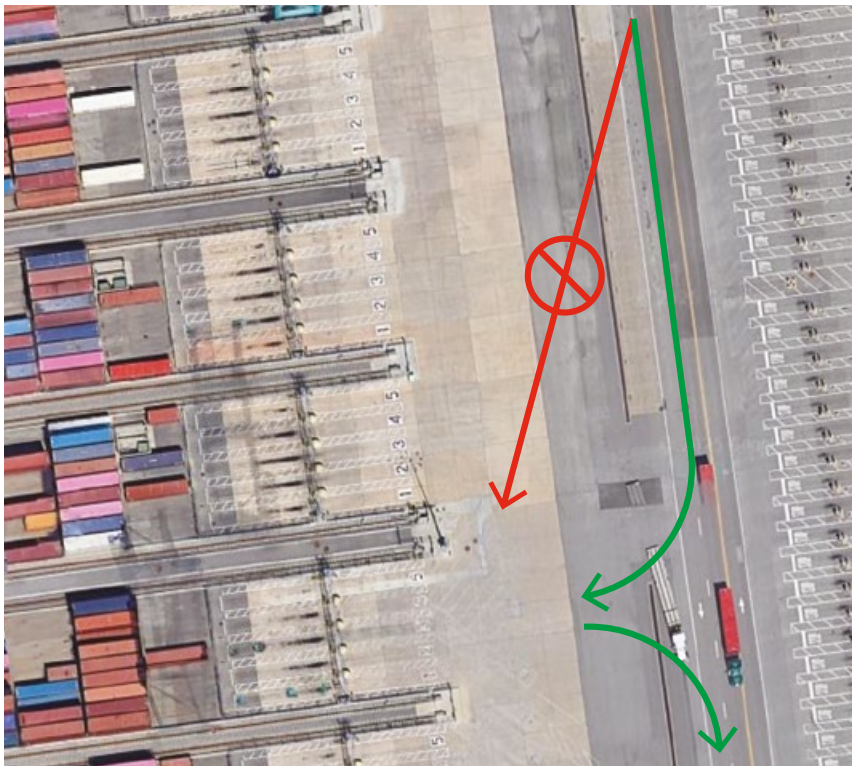
Figure 3

Staging Lane and Landside Transfer Zone Procedures

SNIT Staging Lane and Landside Transfer Zone Procedures for Motor Carriers

Once a procedure has been agreed, there are numerous practical security measures that can be implemented, depending on the nature of the operations. Without seeking to be exhaustive, the following sections set out suggestions that could be used.

- Drivers **MUST** stop at the kiosk corresponding with their routing ticket and await instruction.
  - For example, a driver directed to stack 28L must use one of the two staging lanes for stack 28.
- If the kiosk screen does not display the truck's license plate, drivers should push the call button for assistance.
- If told to wait for an open lane, drivers must wait until instructed to depart, **EVEN** if they can visually see an open lane.
- Two lanes per stack (typically 4 & 5) are designated for Rail/Yard trucks and will be marked by this yellow sign.
- **Parking in front of the stacks is prohibited.**
- If a driver is instructed to a stack and arrives with no lane open, they should return to the queuing lanes and push the call button for assistance.
- **For dual moves involving separate stacks (per the routing tickets), drivers must return to the staging area** after completing the inbound move to be routed to a new stack for the outbound move.
- If both moves are in the same stack (per the routing tickets), drivers do not have to return to the staging area as long as no chassis change is required.
- In accordance with VIT's Terminal Safety Excellence Policy (TSEP) Rule #1, "Vehicles, equipment, and pedestrians must follow established traffic patterns and signage."
- Drivers are prohibited from cutting diagonally across the landside when approaching their designated stack.



Case study

AI-Assisted CCTV Solution at The Port of Virginia

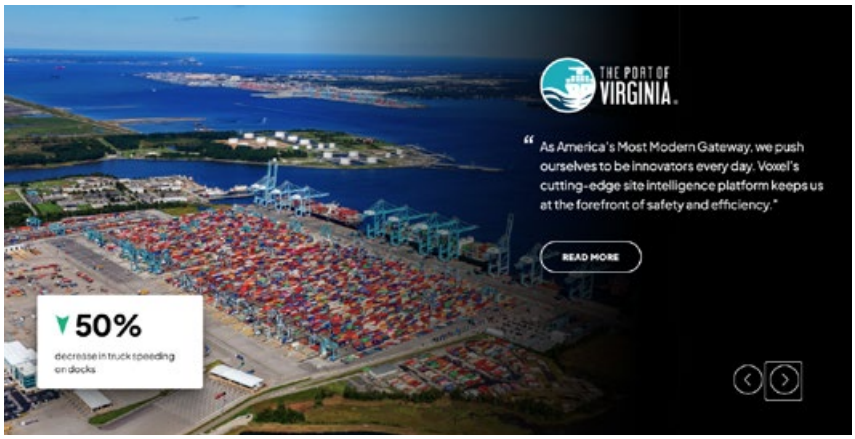
The Port of Virginia recognized the risk of accidents involving over-the-road drivers. Monitoring driver behaviour was particularly challenging due to the large area over which operations are spread and the minimal supervision available. To address these challenges, the terminal implemented an AI-assisted CCTV solution provided by Voxel.

Objectives

The primary objectives were to reduce near-miss incidents and improve efficiency, particularly focusing on the intersection of traffic flows between truck drivers and employees arriving to work in cars. Truck drivers are supposed to give way to the cars, and there is a stop bar to indicate where they should stop. The traditional method of enforcement involved downloading and manually reviewing hours of footage, which was time-consuming and inefficient. Prior to implementation of the new solution, compliance with over-the-road drivers stopping at the stop bar was only 30-40%.

Implementation

The Voxel AI solution automates the monitoring process. Using the port's high mast light poles and a robust camera system, the AI algorithms monitor the site for unsafe behaviours. The Voxel solution was overlaid on existing CCTV infrastructure, limiting the cost impact to the site. The AI is able to identify instances where drivers do not stop at the stop bar, exceeding 97% accuracy, while the model continually learns for even greater precision.. As opportunities to identify a wider range of vehicles are presented, Voxel closely collaborates in support of continuous improvement. When the system identifies an infraction, it sends a 30-second clip of the incident to be reviewed by the management team. Voxel's Customer Success team consistently monitors the variety of incidents to ensure the highest degree of accuracy and value.



Prior to implementation of the new solution, compliance with over-the-road drivers stopping at the stop bar was only 30-40%.

30-40%

Additionally, the solution included off-the-shelf PPE compliance monitoring and pressure pad compliance. It recognized and rewarded drivers for correct behaviour while enabling the Port's management to address non-compliance with additional coaching, and where necessary, issuing citations. Despite only monitoring one pad, word-of-mouth among drivers helped improve overall compliance. The Voxel solution has resulted in an increase in the number of citations issued by the management team, a significant time savings by freeing up managers from hours of footage review, and a dramatic 42% decrease in the number of near miss incidents.

Union Relations

Working with the trade unions and workforces was essential to make the project successful. By discussing and explaining the safety benefits it was possible to build a positive relationship with the union and gain their support.

The union was ultimately supportive, recognizing the potential to keep workers safe and monitor for issues like driver fatigue. Despite misgivings about AI among the workforce, thorough and careful messaging helped mitigate concerns.

Conclusion

The AI-assisted CCTV solution has led to significant safety and efficiency gains. .

- 50% reduction in truck speeding
- 15% reduction in PPE violations
- 85% increase in safety team efficiency
- 125 minutes daily time savings for safety managers

Continuous collaboration with Voxel and mindful engagement with the labour union and workforce have been crucial to the success of this initiative. The solution not only improved compliance and monitoring but also fostered a safer working environment for all stakeholders.

VOXEL

Winners of the TT Club Innovation In Safety Awards 2025

The AI prompted a 50% reduction in truck speeding.

50%

This case study serves to demonstrate an example of effective deployment. There are of course other operators and innovators employing this type of technology to good effect. If you belong to either group we would like to hear from you.

6

Conclusions

Hierarchy of controls:

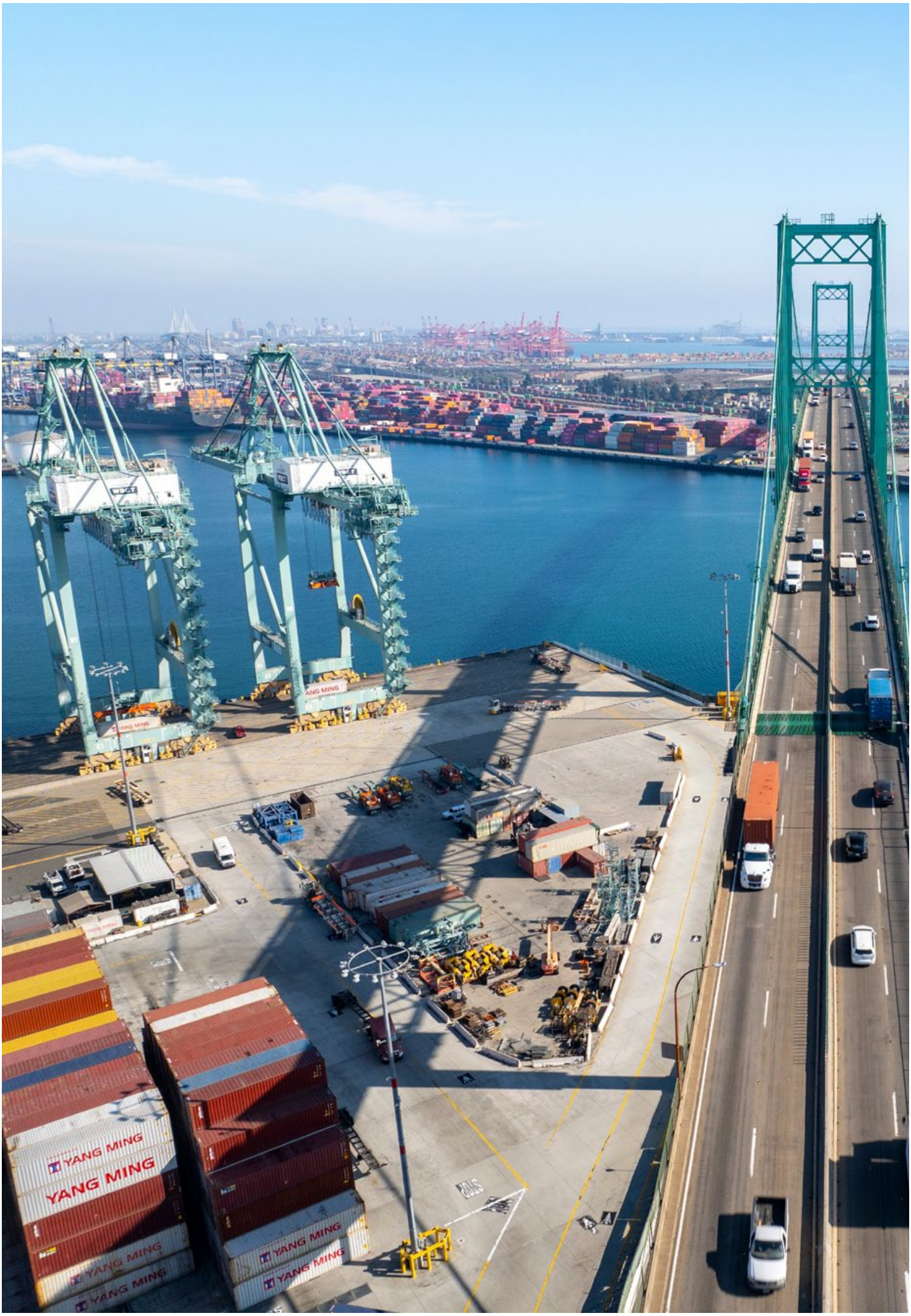
Truck drivers are at their most vulnerable when they exit their vehicles within operational zones. This vulnerability exposes them to numerous risks, including pedestrian/ vehicle collisions, slips, trips, and falls. To mitigate these risks, it is imperative to develop procedures and design sites that minimize the need for drivers to leave their vehicles. Using the hierarchy of controls principles, the first step when assessing risk should always be elimination, recognising that elimination, where possible, is the most effective remedy.

Communication is Key:

Clear, unambiguous instructions are essential. Consider the diverse backgrounds of truck drivers—language barriers can be overcome with pictorial handouts and signage. Recognize that truck drivers often work in isolation for long hours and may seek interaction when not driving. Operational inefficiencies might inadvertently encourage drivers to leave their vehicles to help, which can increase risk.

Call to Action:

Creating safe environments for visiting truck drivers is of paramount importance. Implement robust risk assessments, enforce strict safety protocols, and foster a culture of safety that prioritizes the well-being of truck drivers on every visit to your site.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Please contact us at **riskmanagement@ttclub.com** or visit us at **ttclub.com**

ICHCA International

Established in 1952, ICHCA International is an independent, not-for-profit organisation dedicated to improving the safety, productivity and efficiency of cargo handling and movement worldwide. ICHCA's privileged NGO status enables it to represent its members, and the cargo handling industry at large, in front of national and international agencies and regulatory bodies, while its Technical Panel provides best practice advice and develops publications on a wide range of practical cargo handling issues.

Operating through a series of national and regional chapters, including ICHCA Australia, ICHCA Japan and plus Correspondence and Working Groups, ICHCA provides a focal point for informing, educating, lobbying and networking to improve knowledge and best practice across the cargo handling chain.

ichca.com

TT Club

TT Club is the established market-leading independent provider of mutual insurance and related risk management services to the international transport and logistics industry. TT Club's primary objective is to help make the industry safer and more secure. Founded in 1968, the Club has more than 1100 Members, spanning container owners and operators, ports and terminals, and logistics companies, working across maritime, road, rail, and air. TT Club is renowned for its high-quality service, in- depth industry knowledge and enduring Member loyalty. It retains more than 93% of its Members with a third of its entire membership having chosen to insure with the Club for 20 years or more.

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Thomas Miller

TT Club is managed by Thomas Miller, an independent and international provider of market leading insurance services. Most of the businesses we currently own or manage are acknowledged leaders in their chosen market. Our portfolio includes mutual organisations and, increasingly, specialist insurance services businesses.

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