

Reducing Accidents and Insurance Claims Within Ports and Terminals 2018

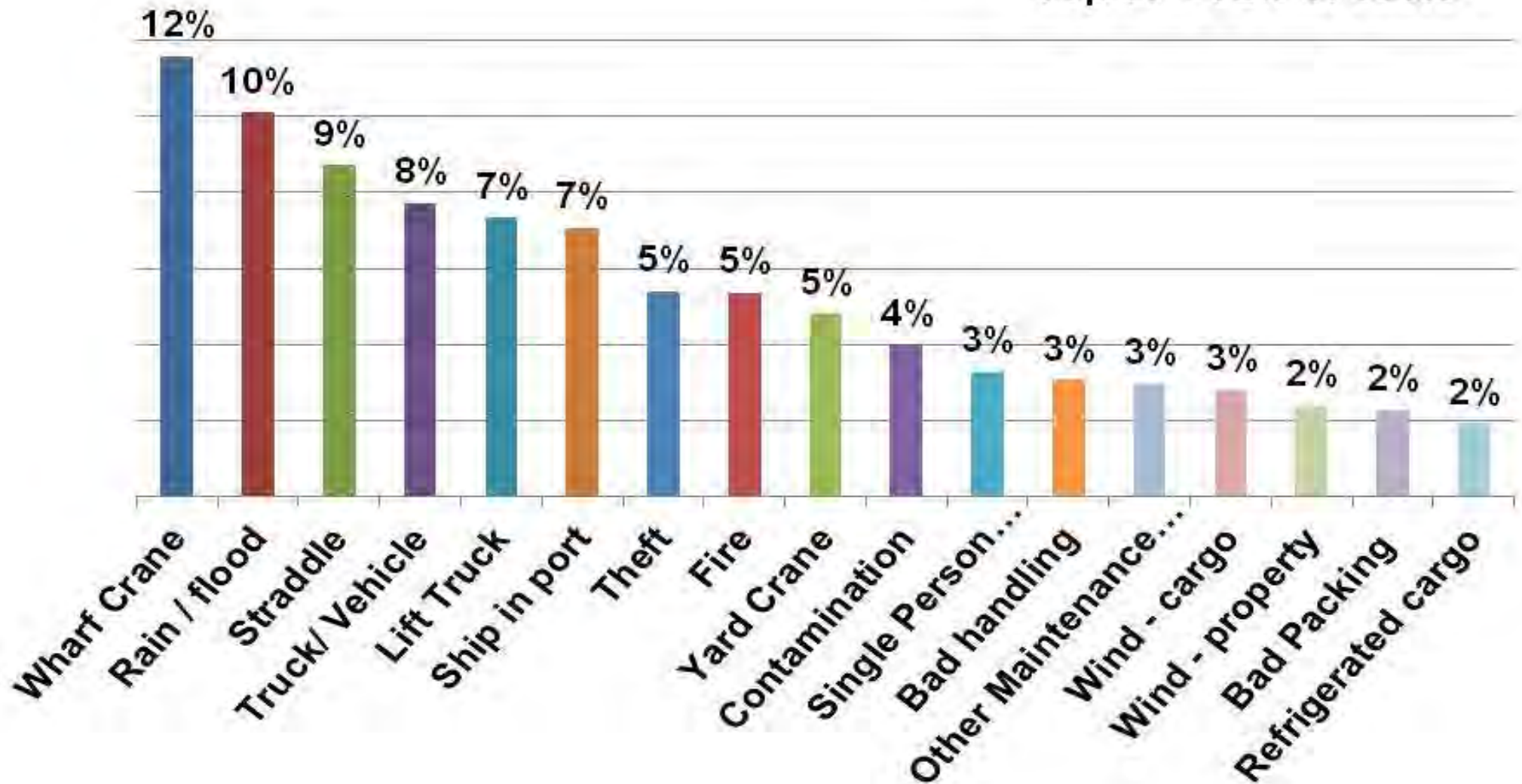
TT CLUB
IS MANAGED
BY **THOMAS
MILLER**

Sandro Chu
Senior Claims Executive – TT Club

Analysis of the main causes of claims:

- Includes last 5 years data
- All claims over US\$10,000
- Over 7,000 claims
- Includes all claim types:
 - Property
 - Liability
 - Bodily injury

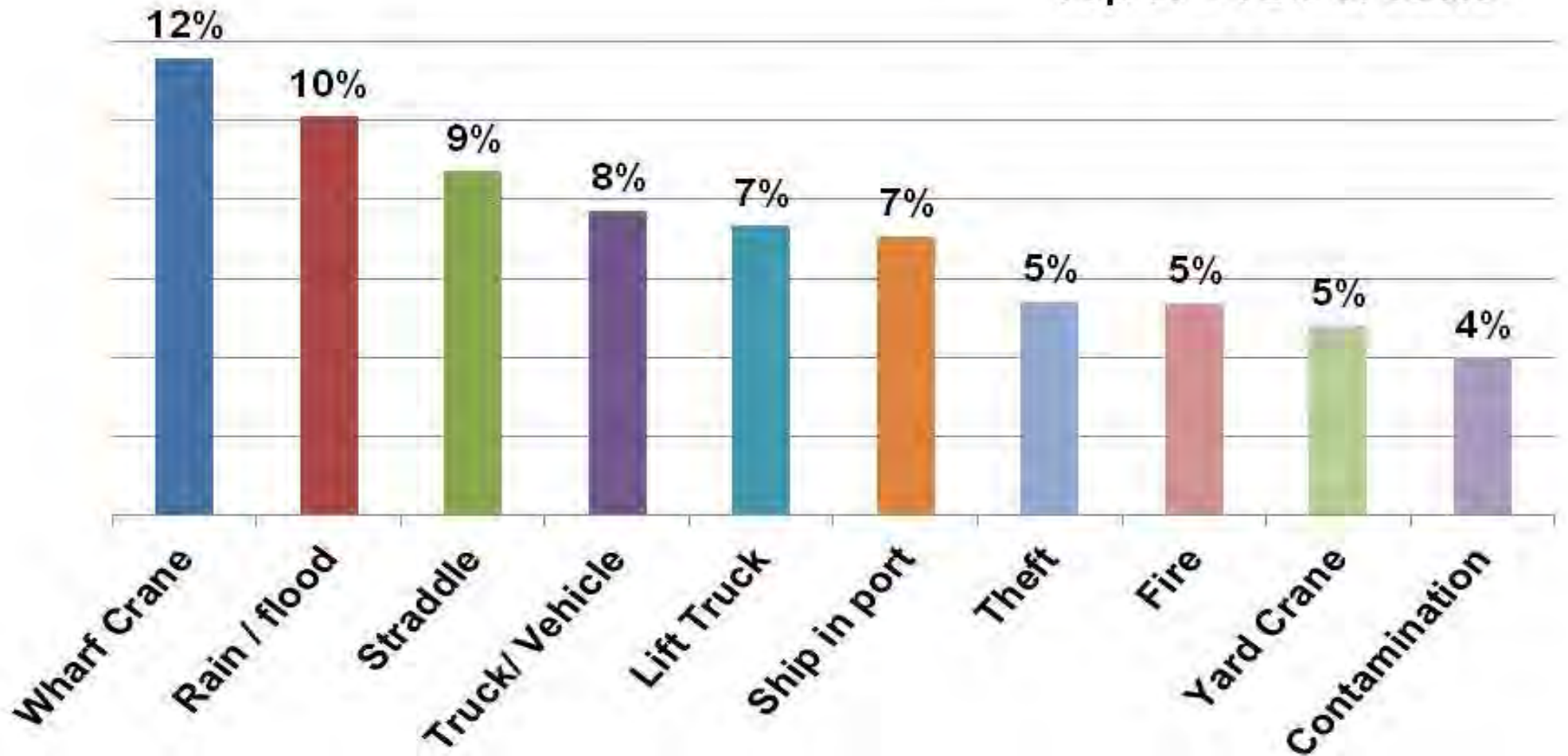
Top 10 = 72% of costs



Port & Terminal members

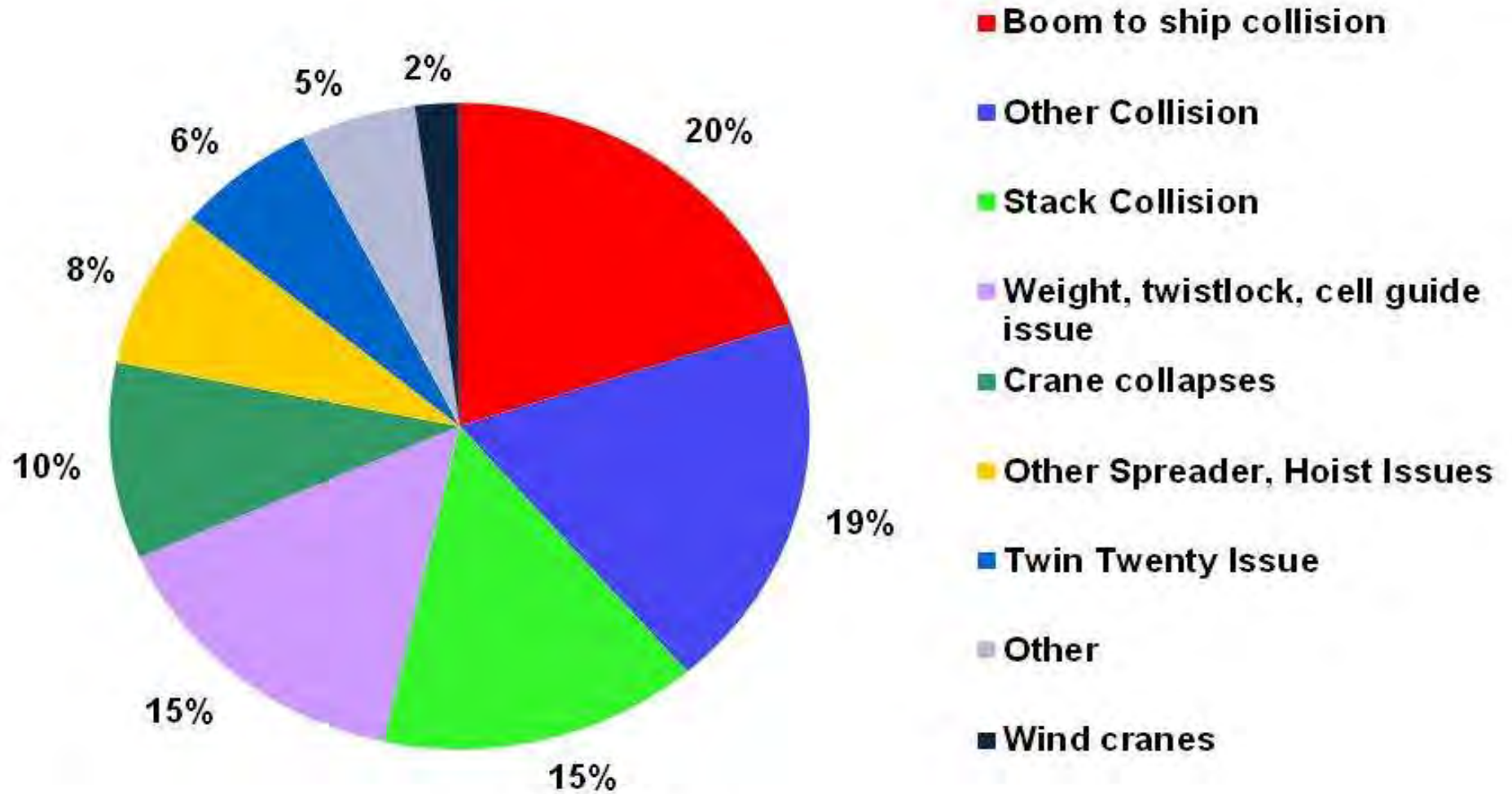
Top 10 risk costs

Top 10 = 72% of costs



Container Terminals

Quay crane issues costs





20% of quay crane claims costs

Biggest single cause of quay crane claims cost

Prevention:

Totally preventable with quay crane boom anti-collision sensors

Laser sensors – www.sick.com

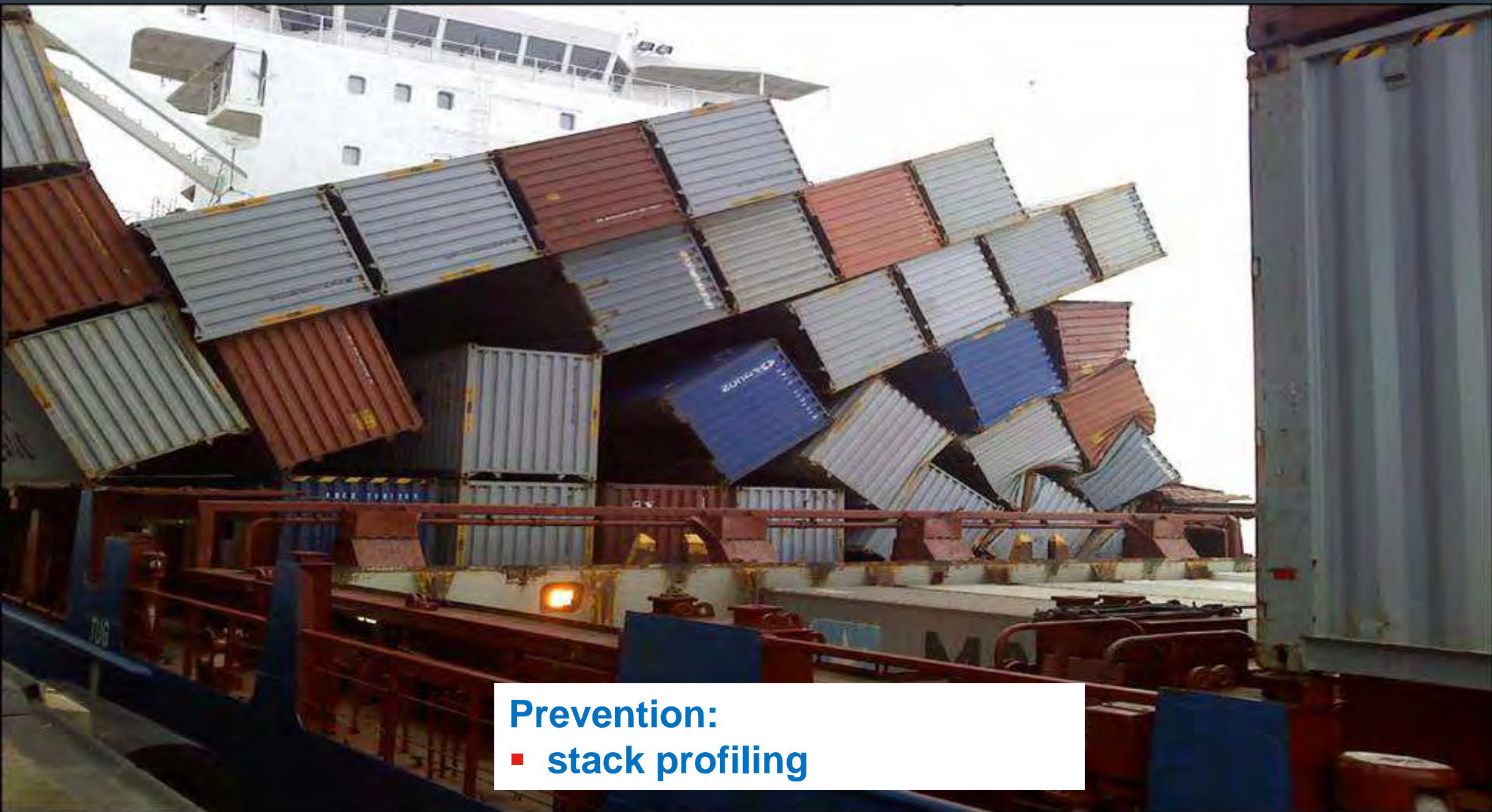
19% of quay crane claim costs

Examples:

- Gantry collisions
- Hatch cover hits ship
- Hatch cover hits crane legs
- Container hits lasher

Prevention:

- Anti-collision sensors for travel
- Crane to crane anti-collision sensors
- Crane driver training
- Lasher training.



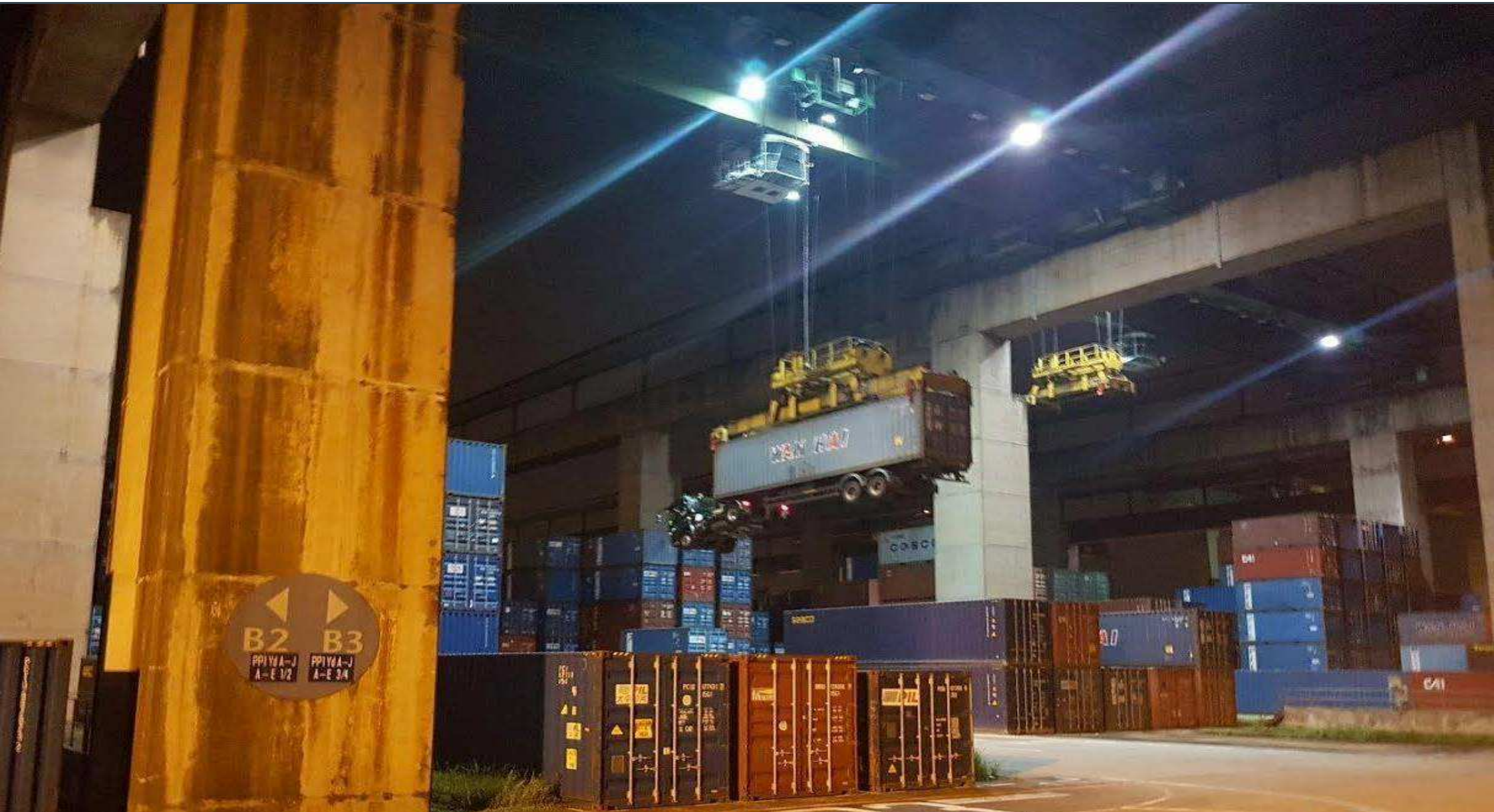
Prevention:
■ **stack profiling**



Prevention:

- **Twistlock load sensing system**

Lifting the trailer and container



Lifting the trailer and container





CONTAINER GOT STUCK
in container cell guides!

Prevention:

- **Twistlock load sensing system**

Spreader, twistlock, container weight & eccentricity issues

15% of quay crane claim costs

Many preventable with twistlock load sensing technology

Measures weight & eccentricity of each container

Many other safety features

Can be installed on any twistlock, on any spreader and on any equipment

Suppliers:

- Lasstec – www.conductix.com/en/product.../lasstec-container-weighing-system
- Bromma – www.bromma.com
- Strainstall – www.strainstall.com

Detects & prevents:

- Lifting if not all twistlocks engaged
- Slack rope detection after landing without box

Measures and records:

- Each twistlock & total container weight
 - Safer handling of containers
 - Better ship planning to ensure trim and stability
- Load eccentricity in single & twin lift
 - Help prevent trucks overturning
 - Can side shift spreader before exiting ship cell guides
- Twistlock load cycles
 - Optimise twistlock replacement intervals
 - Spreader & crane life cycle management & overload tracking



Prevention:

- structural inspections annually
- using qualified structural engineers

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Examples:

- **Dropping container due to:**
 - hoist failure
 - rope failure
- **Slings broke**
- **Incorrect slinging procedure**

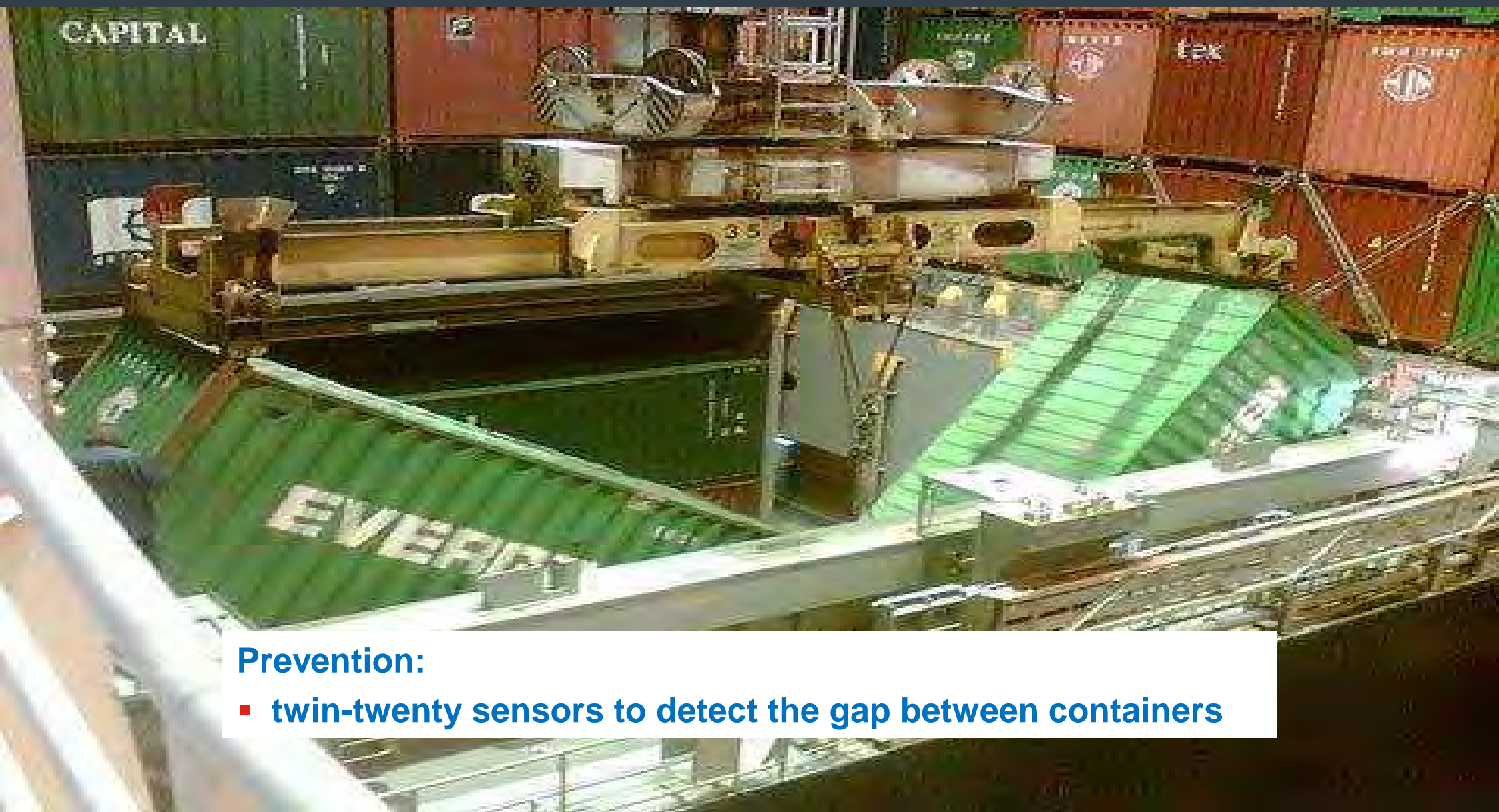
Prevention:

- **Training for riggers**
- **Good spreader and hoist system maintenance**
- **Sling maintenance**



Prevention:

- twin-twenty sensors to detect the gap between containers



Prevention:

- **twin-twenty sensors to detect the gap between containers**

Tornados can happen anywhere today



Crane blown over **Forecast windstorm**



Prevention:

- **Cranes secured before the storm arrives**
- **Storm pins and tie-downs on all cranes regardless of location**

Windstorm – crane blown along wharf

Sudden windstorm



Prevention:

- All gantry brakes working 100%

Crane blown along wharf **Sudden windstorm**



Prevention:

- All gantry brakes working 100% at all times

Prevention:

Forecast storms:

- Procedures to secure cranes
- Storm pins & tie-downs on all quay cranes

Sudden windstorms:

- All motors and brakes working at all times

Refer to TT Club Windstorm II booklet

- Available at www.ttclub.com

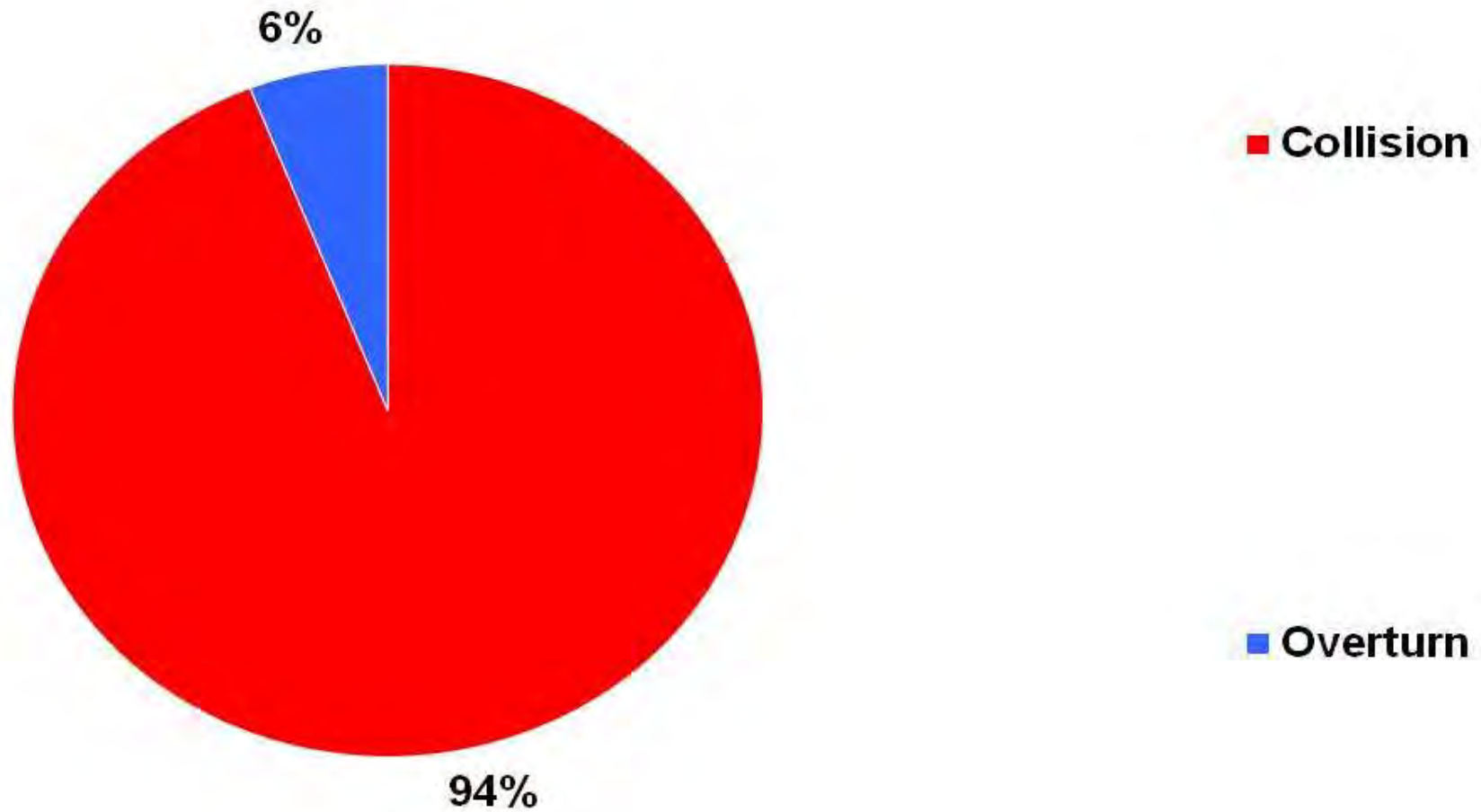


- Park quay cranes in centre of berth
- Ensure structural integrity of cranes – annual inspections
- Ensure all cranes are pinned and tied-down during storms
- Ensure all gantry brakes are always working 100%
- Install boom anti-collision sensors
- Install travel anti-collision sensors
- Install stack profiling system
- Install twistlock load sensing system
- Install twin-twenty detection system
- Consider automation and remote control
- TT Club, ICHCA and PEMA joint publication
 - “Recommended minimum safety features for quay cranes”
 - <http://www.ttclub.com/publications/crane-safety-recommendations/>



Prevention:

- Climate change?
- Identify flood protection systems
 - Sandbagging
 - Jersey Barriers
 - Fabric Fold-Back Walls, Liner Walls, or Temporary Levees
 - Inflatable (air- or water-filled) Dams
 - Flood-Proof, Retractable Gates
- Move property and cargo to higher ground
- Place containers with cargo on top of empties
- Store items undercover.









Prevention:

Training:

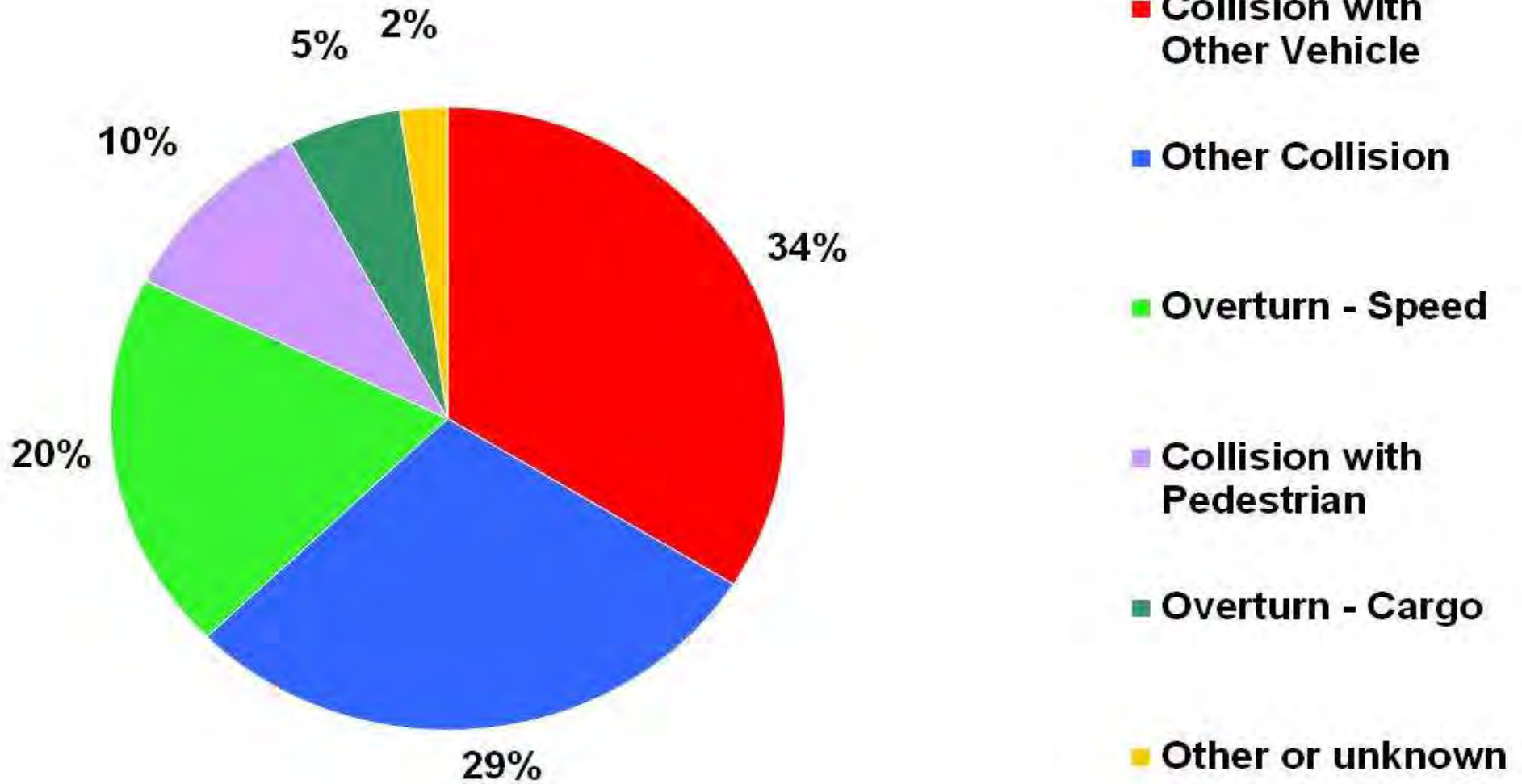
- Continuous safety awareness
- Driver training including refresher training
- Only use best and safest operators to drive straddles

Operational procedures:

- One-way traffic flows and good lane markings
- Minimise pedestrian and vehicle traffic in yard
- Speed limits with monitoring and enforcement

Maintenance procedures:

- Preventative not breakdown maintenance strategies for hydraulic systems
- Good quality hydraulic hoses & connections
- Ensure correct tyre pressures
- Segregate and enclose hydraulic hoses away from hot engine components.







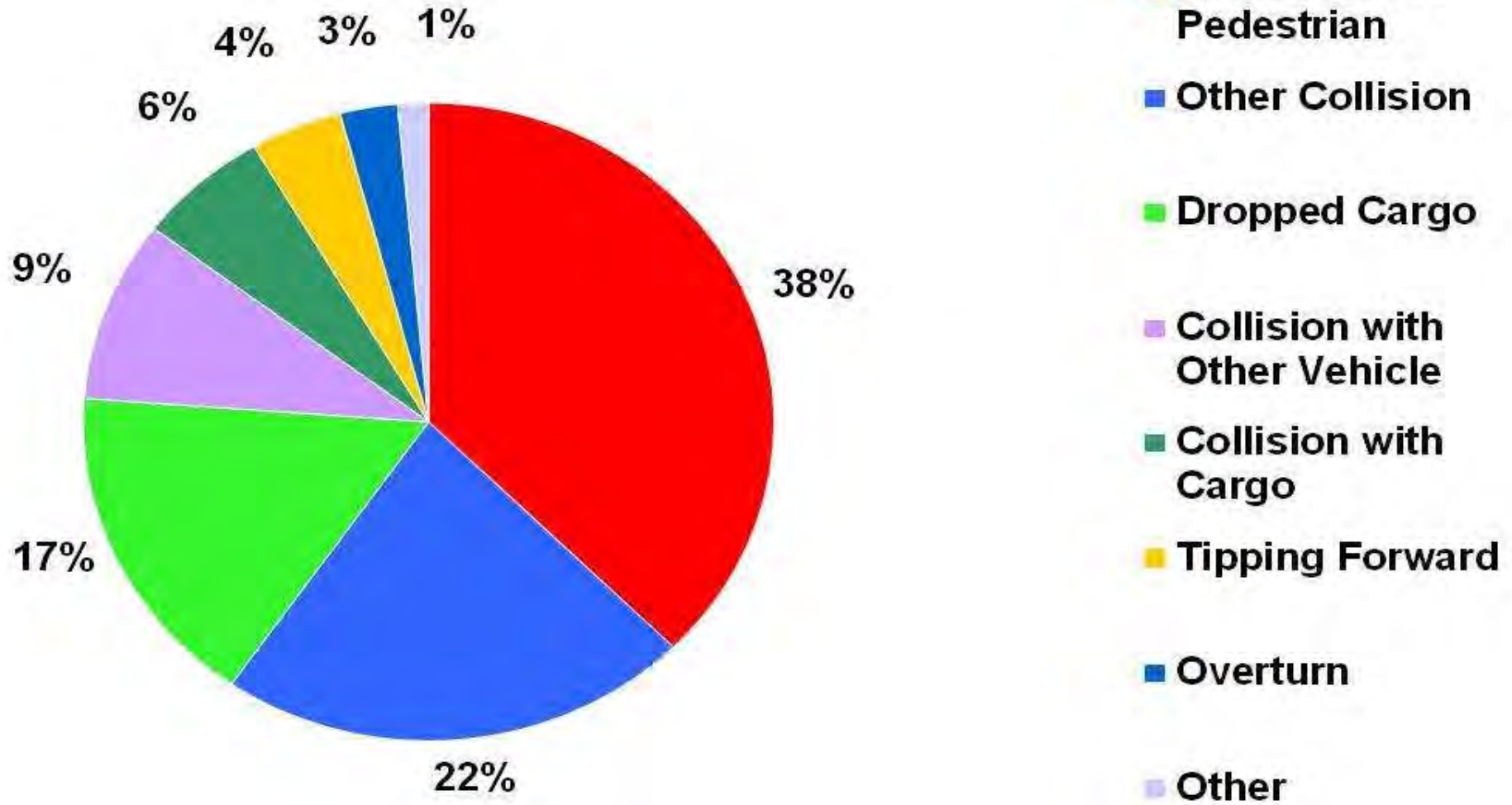




Never go on roundabout or bend next to truck

Prevention:

- Driver training
- No pedestrians in yard
- Terminal speed limits implemented and enforced
- One-way traffic flows
- Site inductions





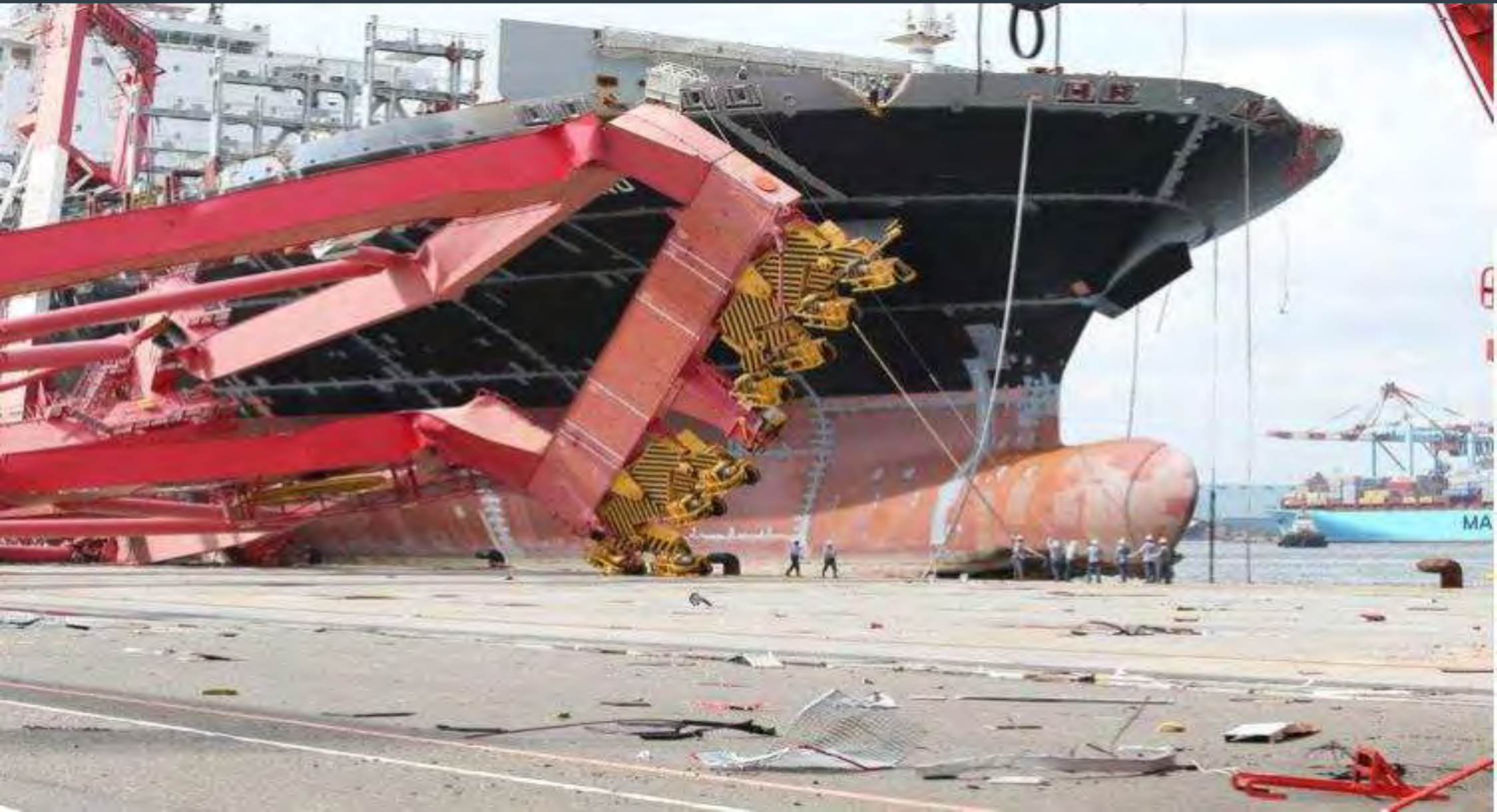




Prevention:

- Driver training
- Reversing beepers
- Reverse cameras
- RFID system on all pedestrians and lift trucks
- Anti-collision sensors
- No pedestrians near lift trucks









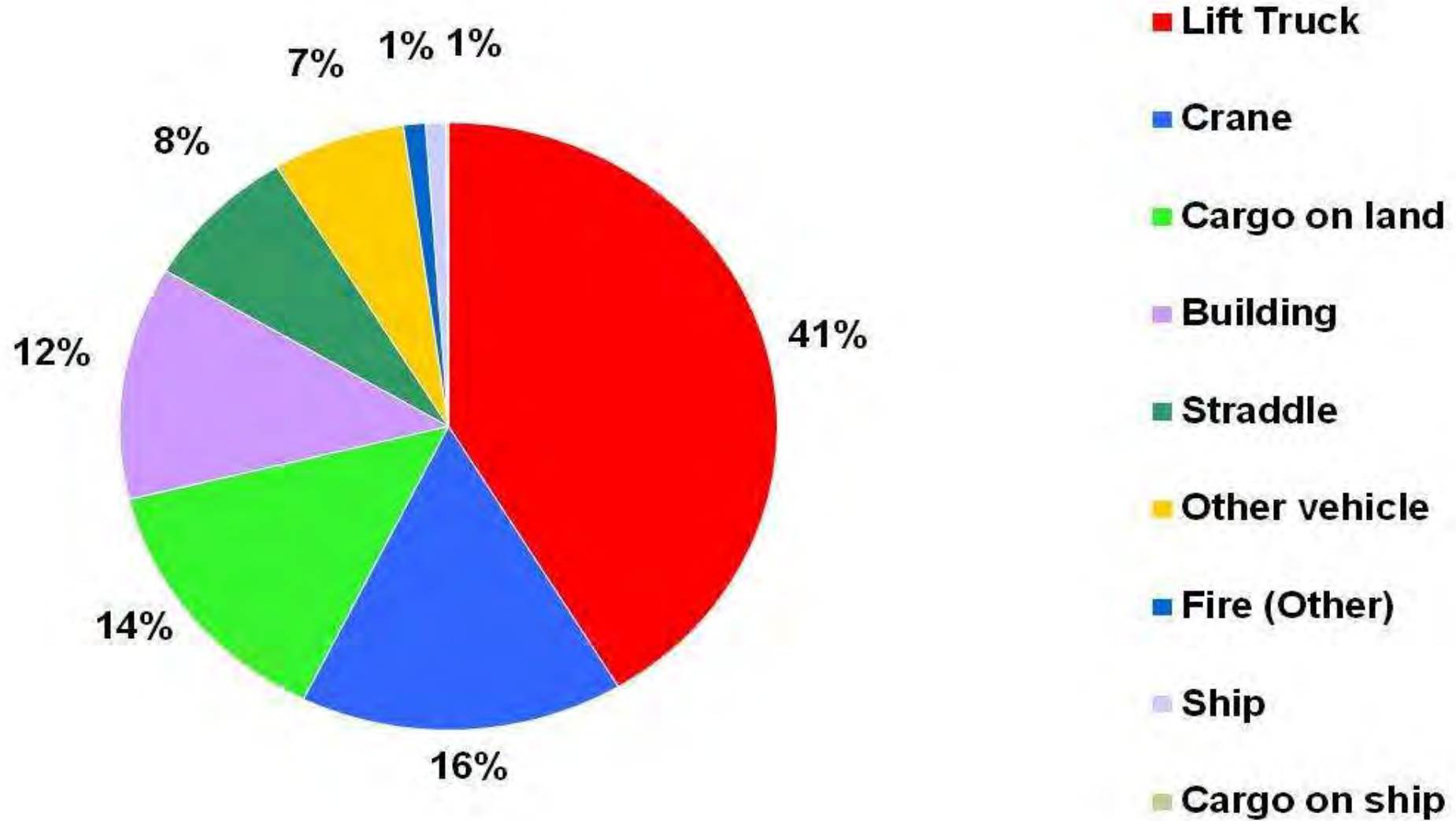
Ships cause damage in ports in calm and bad weather

Terminal issues:

- Parking location of quay cranes
- Crane booms raised

Port Authorities issues:

- Bollard strength with ship cascading
- Number and size of tugs
- Port control procedures
- Procedures in severe weather – stay or go
- Spare lines.







12% of fire claims costs

Most due to electrical faults

Prevention:

- Site security
- Fire risk assessments
- Declare dangerous goods
- Install fire detection and suppression systems
- Test and inspect fire fighting equipment
- No smoking policy
- **Thermographic surveys of switchboards**
- **Good housekeeping.**









15% of fire claims costs

Most due to miss-declared cargo

Prevention:

- Declare dangerous goods
- Cargo compatibility
- Minimum stowage separation
- Flash or ignition point
- Training and education / qualified personnel
- IMDG mandatory training
- Storage area separation, security and bunding?







72% of fire costs in ports & terminals occur to mobile equipment

Most caused by hydraulic leaks

Prevention:

- Good design – no hydraulic hoses near exhaust or turbo
- Good maintenance
- Good quality hydraulic parts
- Replacement & procurement strategies – equipment age?
- Losses reduced with fire suppression for confined spaces:
 - Engine compartments & Electrical cubicles
- Low cost & effective US\$1,000 to US\$10,000
- Can save a US\$800,000 lift truck and a life

www.blazecut.com



Training:

- Continuous safety awareness
- Enhanced focus on driver training (simulators)

Procedures:

- Preventive not breakdown maintenance
- Better crane securing procedures & brake maintenance
- Structural inspections
- Ship movement & berthing procedures
- Security – theft
- Systems & processes – pack it right
- Traffic management

Re-design/Technology:

- Wharf crane boom anti-collision sensors
- Wharf & yard crane stack profiling
- Mobile equipment travel anti-collision
- Fire suppression
- Container weight & eccentricity measurement.

Thank you
Any questions?

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