



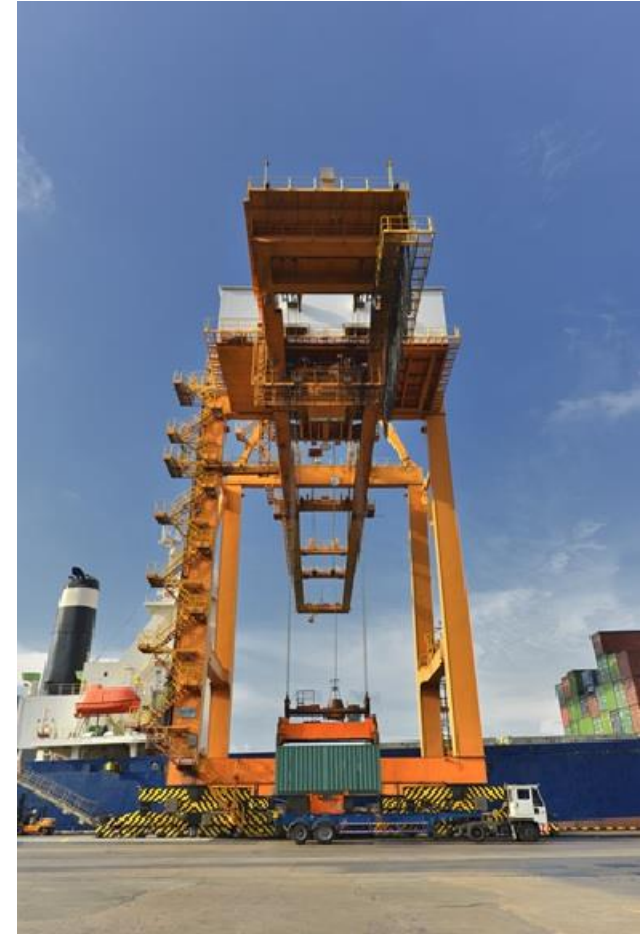
**Bulk Liquid Terminals
Risk Workshop
2023**

Sandro Chu – TT Club

TT CLUB
IS MANAGED
BY **THOMAS
MILLER**

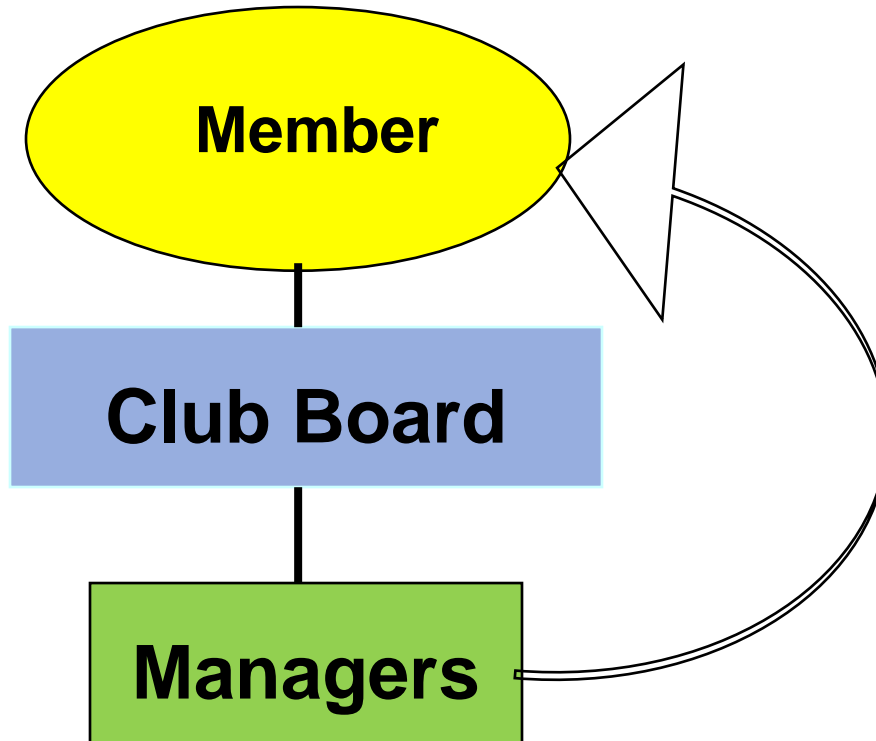
TT CLUB 

- **What is TT Club?**
 - **‘TT’ stands for ‘through transport’, reflecting the door-to-door nature of risks when transporting goods around the world.**
 - **‘Club’ denotes the mutual status, with ownership belonging to the Members rather than shareholders**



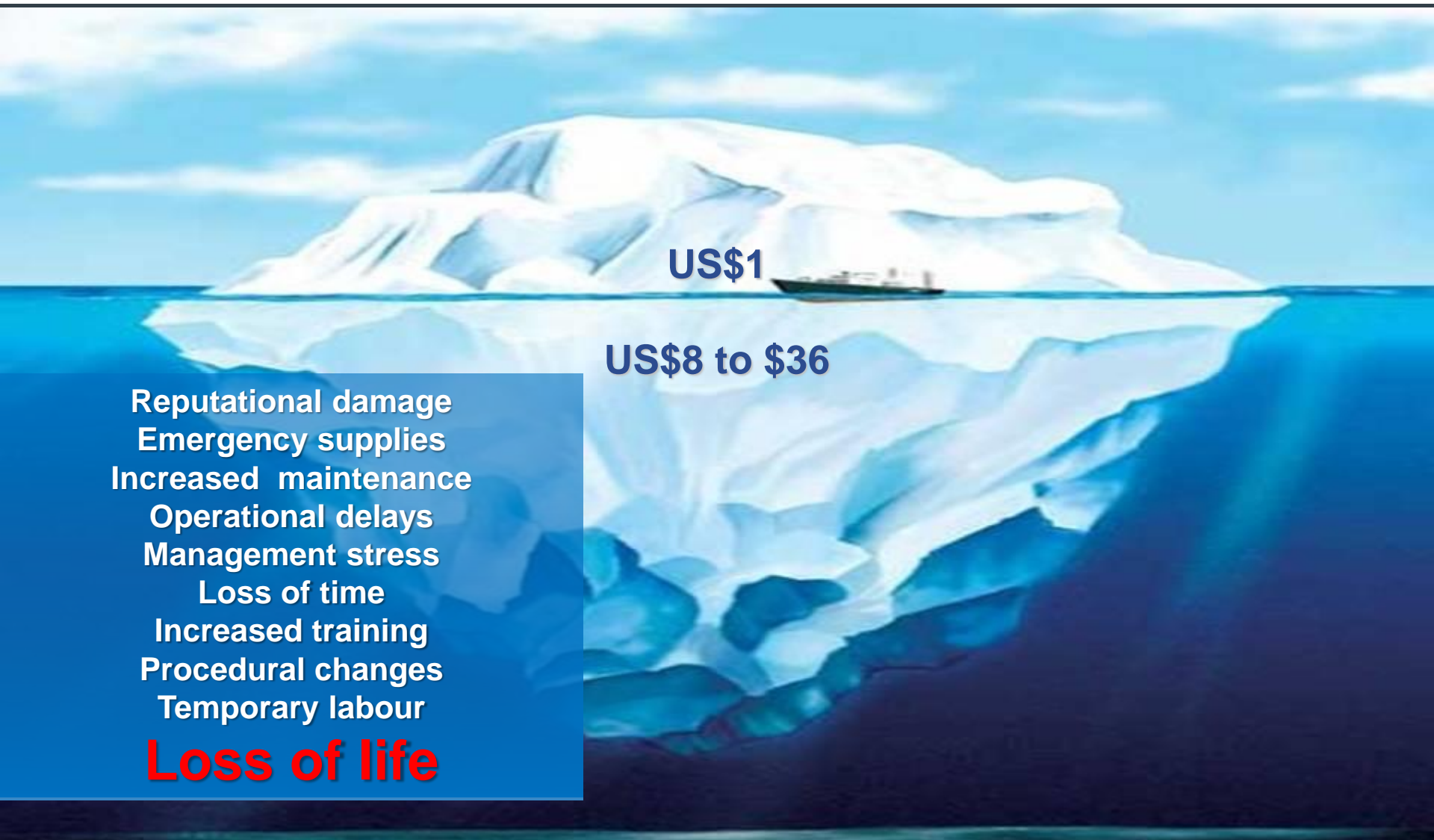
- **Established 1968**
- **Mutual Insurer - Owned by it's Members and run to the benefit of Members**
- **Provide insurance at cost**
- **Non profit making**
- **Managed by Thomas Miller & Co on behalf on the Club**





Daily management of the work:

- Underwriting
- Claims
- Loss prevention
- Promotion
- Other administrative tasks



US\$1

US\$8 to \$36

- Reputational damage
- Emergency supplies
- Increased maintenance
- Operational delays
- Management stress
- Loss of time
- Increased training
- Procedural changes
- Temporary labour
- Loss of life**

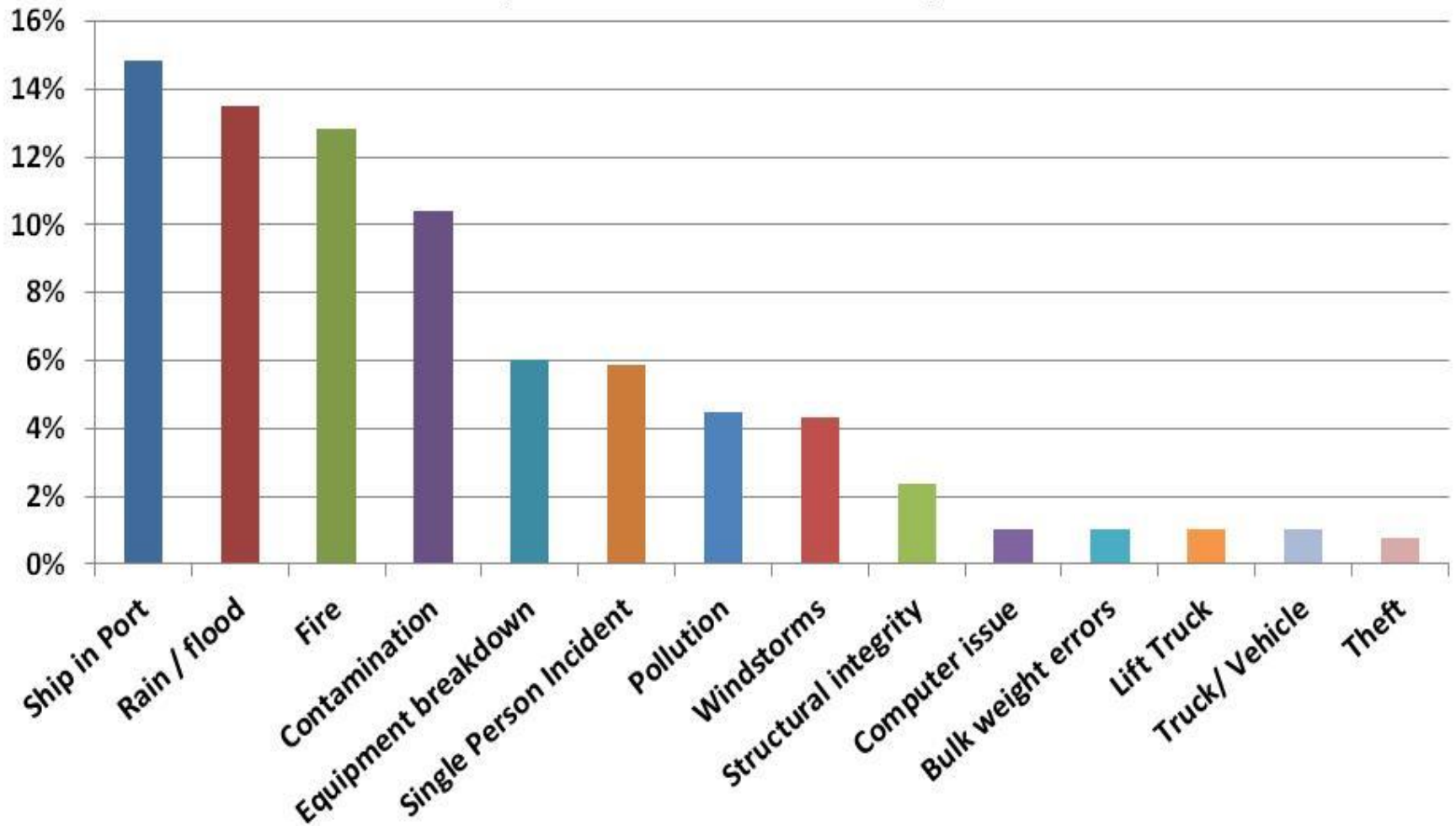


Top risk issues

Loss prevention actions

Summary

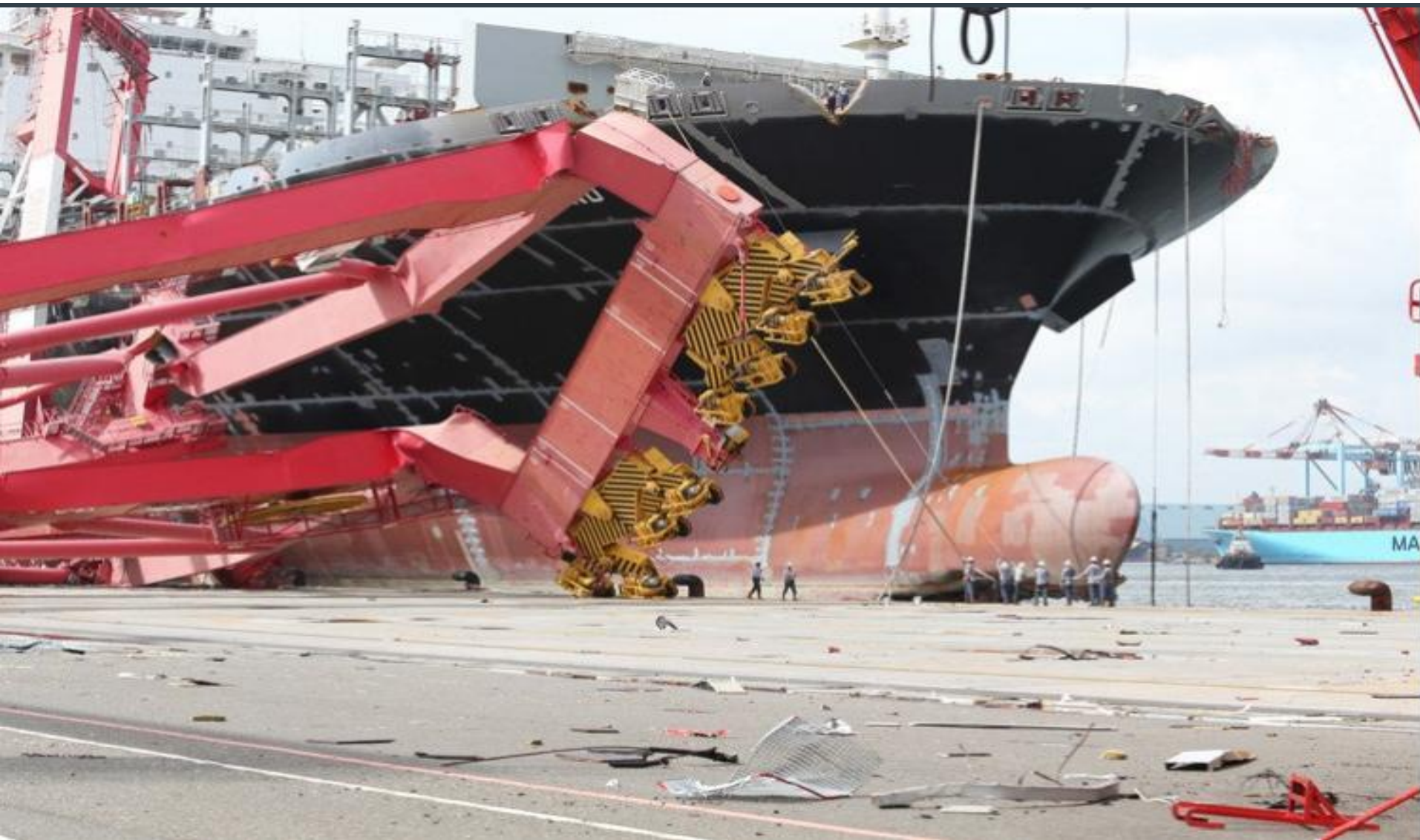
Liquid Bulk terminal members Top 10 risks = 76% of claim costs



TT CLUB Ship broke mooring lines – knocked over cranes



TT CLUB  Ship broke mooring lines – knocked over cranes









Ship too strong for bollard



Ships cause damage in ports in calm and bad weather

Terminal issues:

- Parking location of quay cranes
- Crane booms raised

Port Authorities issues:

- Quality of pilots
- Number and size of tugs
- Bollard capacity
- Procedures in severe weather – stay or go
- Spare lines.

Tornados can happen anywhere today

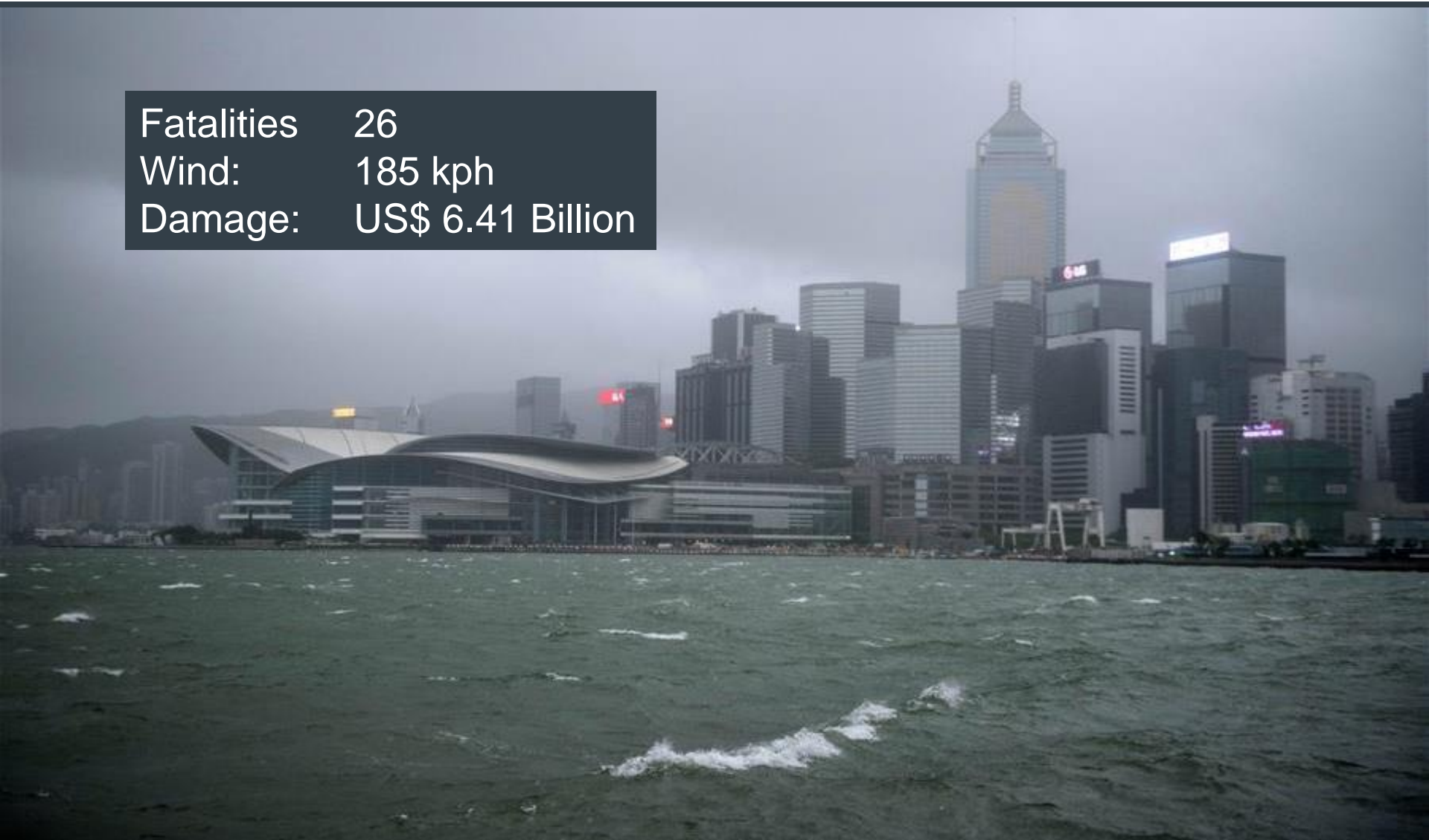


Location: Austria, Czech Republic, Germany, ...
Damage: €12 bn



Typhoon Hato South China 2017

Fatalities 26
Wind: 185 kph
Damage: US\$ 6.41 Billion



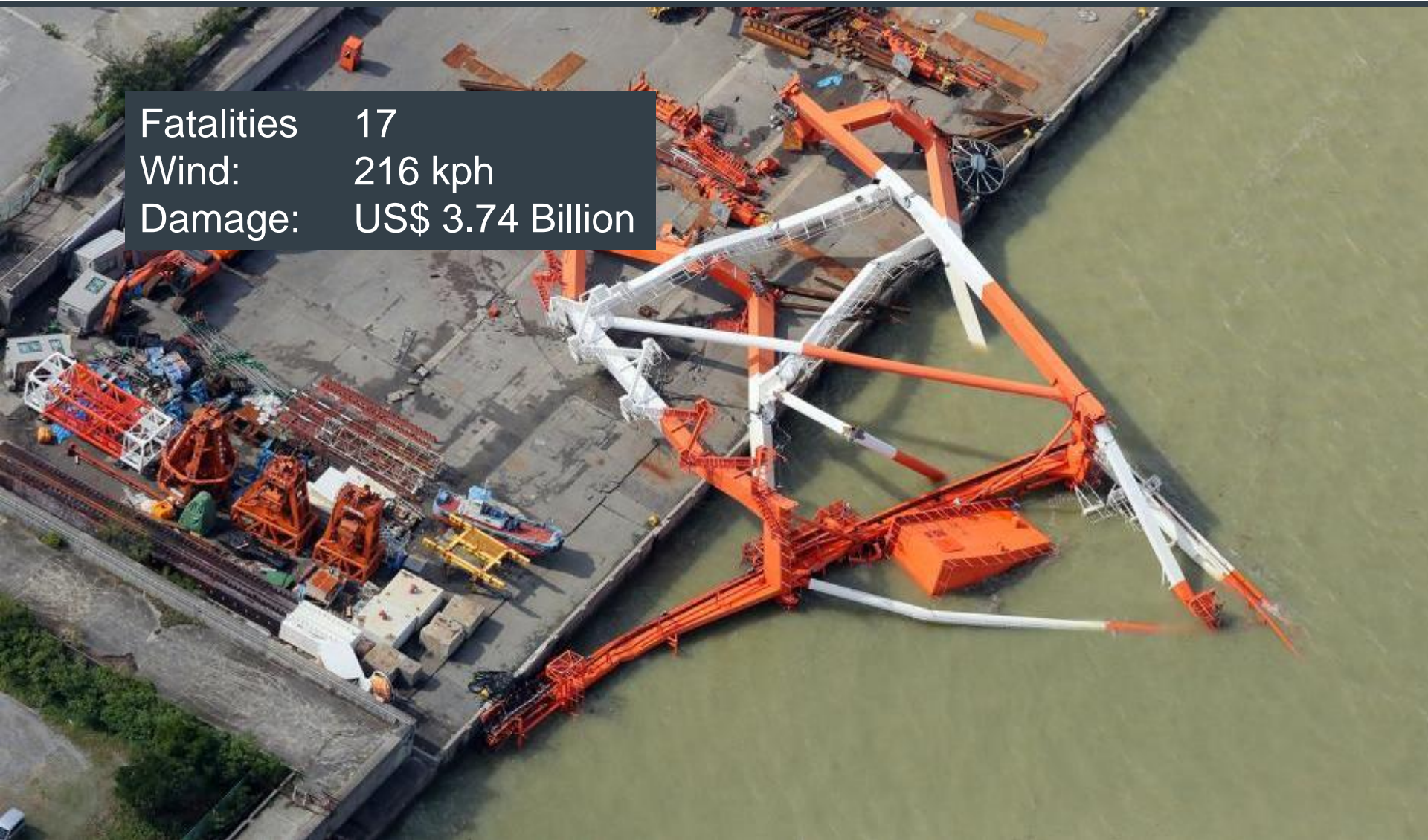
Typhoon Mangkhut South China 2018

Fatalities 134
Wind: 205 kph
Damage: US\$ 3.74 Billion



Typhoon Jebi Japan 2018

Fatalities 17
Wind: 216 kph
Damage: US\$ 3.74 Billion



Monsoon floods Australia - 2019

Fatalities: 6
Rainfall: 1.34 m in 9 days
> annual average
Damage: ?





Water filled surge barrier





Demountable flood barrier



Prevention:

- Identify flood protection systems:
 - Sandbagging, Jersey Barriers, Fabric Fold-Back Walls, Liner Walls, or Temporary Levees, Inflatable (air- or water-filled) barriers or Dams, Flood-Proof, Retractable Gates
- Move property to higher ground
- Store items undercover
- Adequate drainage & drains unblocked

Property damage prevention:

- Secure everything when storm forecast
- Roller doors adequately designed and supported
- Roofs secured adequately
- Windows shuttered or covered
- Unsecured rubbish removed

Refer to TT Club Windstorm II booklet

- Available at www.ttclub.com



Prevention:

- Segregation of different cargo types
- Systems to ensure no mixing of different cargo types
 - manual double checks
 - Automation
- Pipe and system cleaning.



Most due to electrical faults

Prevention:

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

Oil tank explosion caused by lightning



- **Special focus on detecting & preventing oil spills, gas leaks and fires**
- **More stringent regulatory requirements**

Loss prevention focus:

- **Lightning arrestors**
- **Fire detection and suppressions systems everywhere**
- **Gas leakage detection systems**
- **Emergency response procedures & gear for fires, oil spills, gas leaks.**



Most caused by hydraulic leaks or electrical faults

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 in engine compartment
- Low cost & effective ~US\$1,000 to US\$10,000
- Can save an expensive FEL











Prevention:

- Safety awareness
- Tool box talks
- Safety audits with workers
- Good housekeeping.









Prevention:

▪ Traffic management procedures:

- One-way traffic flows
- Limiting vehicles & pedestrians in yard
- Site induction procedures
- Safe area for truckers to cover/uncover, secure/unsecure loads
- Speed limits set and enforced

▪ Technologies:

- Proximity system on all pedestrians and mobile equipment
- Mobile equipment anti-collision sensors
- Rear view cameras on lift trucks & front end loaders.

Loss prevention focus:

- **Ships hitting wharf - bank guarantee**
- **Rain & flood**
- **Fire**
- **Contamination**
- **Equipment breakdown**
- **Single person incidents**
- **Pollution control**
- **Windstorms**
- **Structural integrity inspections**
- **Bulk weight errors**
- **Traffic management.**

Thank you
Any questions?

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TT Club
www.ttclub.com