The Safety Gap

SAFEX 2014

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CONCENTRATED ENERGY

EPC GROUPE

The Safety Gap - Objectives

1. Identify types of risk associated with transportation of explosives
2. Provide examples from recent history
3. Discuss risk mitigation – driver preparedness
4. Discuss risk mitigation – vehicle preparedness
5. Discuss risk mitigation – control of contractors
6. Look at crisis management immediately following an event
7. Discuss crisis management at corporate level

The Safety Gap - Risks

Types of risk:

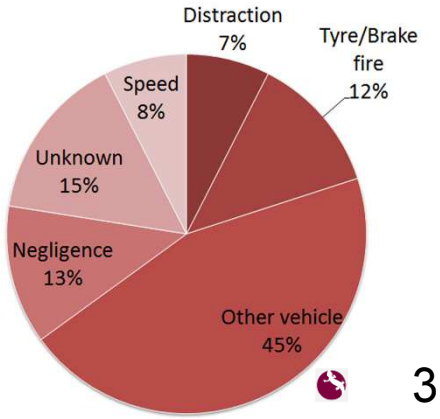
- Terrorist
- Criminal
- Negligence (own driver)
- Negligence (other drivers)
- Vehicle faults
- Adverse weather
- Badly secured load
- Product failure
- Incorrect packaging (Peterborough incident)

It all happens outside the factory gate – control is limited

The Safety Gap - Safex reports

The analysis of SAFEX reports highlights :

- 3 main causes in road accidents:



  - 12% : Tyre or brake system failure leading to fire
  - 20% : Negligence or distraction (mobile phones, poor driving)
  - 45% : Accident due to external causes (other vehicles)

- 3 aggravating circumstances :

  - Poor weather conditions
  - Load not properly secured (resulting in overturn)
  - Poor emergency response after the accident

The Safety Gap - Example 1

Walden, Ontario truck fire 1998: Cause = Unknown

- Articulated vehicle carrying 18,000 kg's of blasting explosive
- Load detonated 35 minutes after the accident throwing debris nearly 3km
- Good crisis management at the scene and by the driver resulted in zero fatalities
- What crisis management procedures did the company employ ?
- The one person that significantly impacted on the outcome was the driver

The Safety Gap - Example 2

Truck fire Mihailesti, Romania 2004: Cause = Driver negligence

- Ammonium Nitrate manufacturer sub-contracted transport to external provider
- A road tank carrying 20,000kg of Ammonium Nitrate turns over and catches fire on motorway
- Fire burns to detonation, killing 18 people and wounding 13 others
- No crisis management at scene, TV crew were filming with Police and fire service in attendance
- The directors responsible in the manufacturing and transport companies were each given a 4 year prison term and the companies were ordered to pay damages.

The Safety Gap - Example 3

Truck fire Monclova, Mexico 2007: Cause = Negligence, Other driver

- Vehicle on wrong side of road collided with truck carrying 22 tonnes of ANFO.
- 3 occupants of private vehicle died immediately.
- Accident caused vehicle fire which burned to detonation killing 37 and injuring 150.
- Fatalities included Police, Paramedics, Fire Fighters, Reporters and local on-lookers.
- Fire could have been extinguished but driver ran off (and survived !).

The Safety Gap - Example 4

Truck fire Saudi Arabia 2011: Cause = Vehicle fault

- 294 tonnes of Ammonium Nitrate on a 14 truck convoy
- Third truck in the convoy develops a wheel fire
- Good crisis management at the scene evacuates other trucks and opens container to burn
- Load does not detonate, truck is destroyed, no fatalities or injuries.
- The fire was caused by a missing wheel, only one of the fourteen trucks carried a fire extinguisher

The Safety Gap - Mitigation

Driver preparedness:

- Fully trained and certificated ADR drivers
- "Tool box" talks
- Simple emergency procedures (visible in cab)
- Vehicle emergency exercises
- Adequate means of communication
- Knowledge of load characteristics, quantities and limits
- Security clearance
- Regular driver health checks
- Automated tachograph monitoring system

Driver	Duties	Pts	Pts/Dty	% Inf/Dty	REST	SPEED	HOURS	OTHER
Driver 1	16	9	0.56	56.25%		9		
Driver 2	14	6	0.43	28.57%		3	1	
Driver 3	16	5	0.31	31.25%		5		
Driver 4	16	4	0.25	25.00%		4		
Driver 5	19	3	0.16	5.26%	1			
Driver 6	16	2	0.13	25.00%		2		2
Total	231	29	0.13	11.69%	1	23	1	2

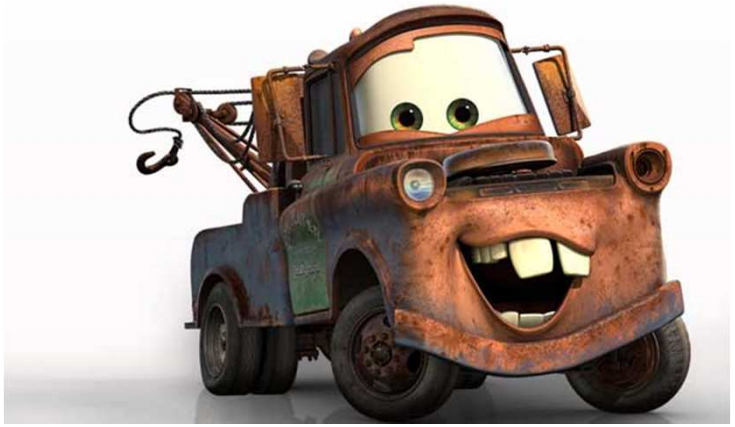
The Safety Gap - Mitigation

Vehicle preparedness:

- Compliance with ADR regulations – EXIII, EXII
- Separate load compartment with “lockfast” doors
- GPS tracking
- Vehicle alarms and panic buttons
- Vehicle roof marking
- Planned Preventative Maintenance system
- Daily vehicle check sheets (or tablet equivalent)
- Wheel nut indicators
- Speed limiters
- Emergency roadside assistance

The Safety Gap - Mitigation

Control of contractors:



- ISO28001:2007 Supply chain security standard
- Annual financial checks
- Up-to-date copies of suppliers ISO certifications
- Supplier audits
- Vehicle documentation checklist:
  - Drivers licence & ADR
  - Driver and escort photo ID
  - Truck certification
  - Material Safety Data Sheets, placards and paperwork
  - Transport security plan
- Vehicle inspection before loading:
  - Fire extinguishers (in date)
  - Tyres and wheel nut indicators
  - Security system
  - Lights, indicators and brakes
  - General condition and cleanliness

The Safety Gap - Crisis Management

Crisis management – Contract haulage:

- Whose procedures are being followed?
- Does contractor have any procedures?
- Available emergency equipment
- Suitable driver training
- Do vehicles follow approved routes?
- Can you track contractors vehicle?
- Can you track your container if multi-modal?
- Stabling & comfort stops ?

"Irrespective of who is to blame, an incident will negatively impact on your business and possibly the industry as a whole"

The Safety Gap - Crisis Management

Immediate factors to consider:

- Safety of driver(s)
- Risk and proximity to public and emergency services
- Risk to infrastructure
- Risk to environment

- The driver(s) is the most important factor affecting the outcome of the crisis
- The best laid plans and Head Office crisis management teams are of no use at this critical time
- What to do if the driver is not conscious ?
- People can lose up to 90% of their ability to focus in crisis situations
- Use a simple “Crisis List” which should be printed and visible in the cab.
- Train, train and train again - Simple easy to remember process

The Safety Gap - Crisis Management

Simple training mnemonic for drivers:

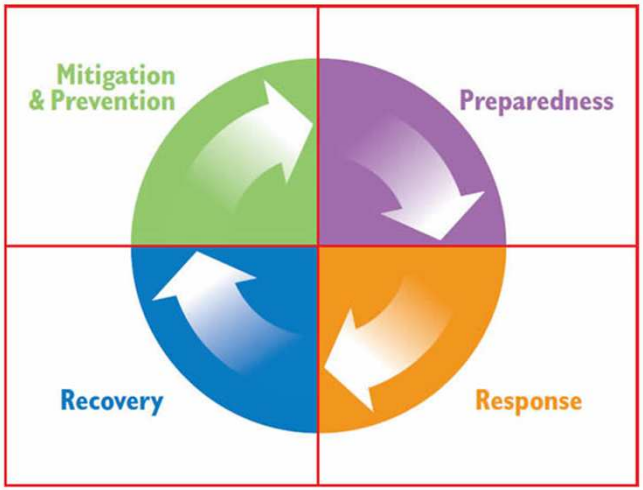
"Always **PANIC** in a crisis"

- **P** Push the panic button on the tracking system
- **A** Assess risk of fire and/or spillage
- **N** Never fight an established fire in a load compartment
- **I** Inform the emergency services
- **C** Cordon off sufficient area around vehicle

The Safety Gap - Crisis Management

Medium term factors to consider:

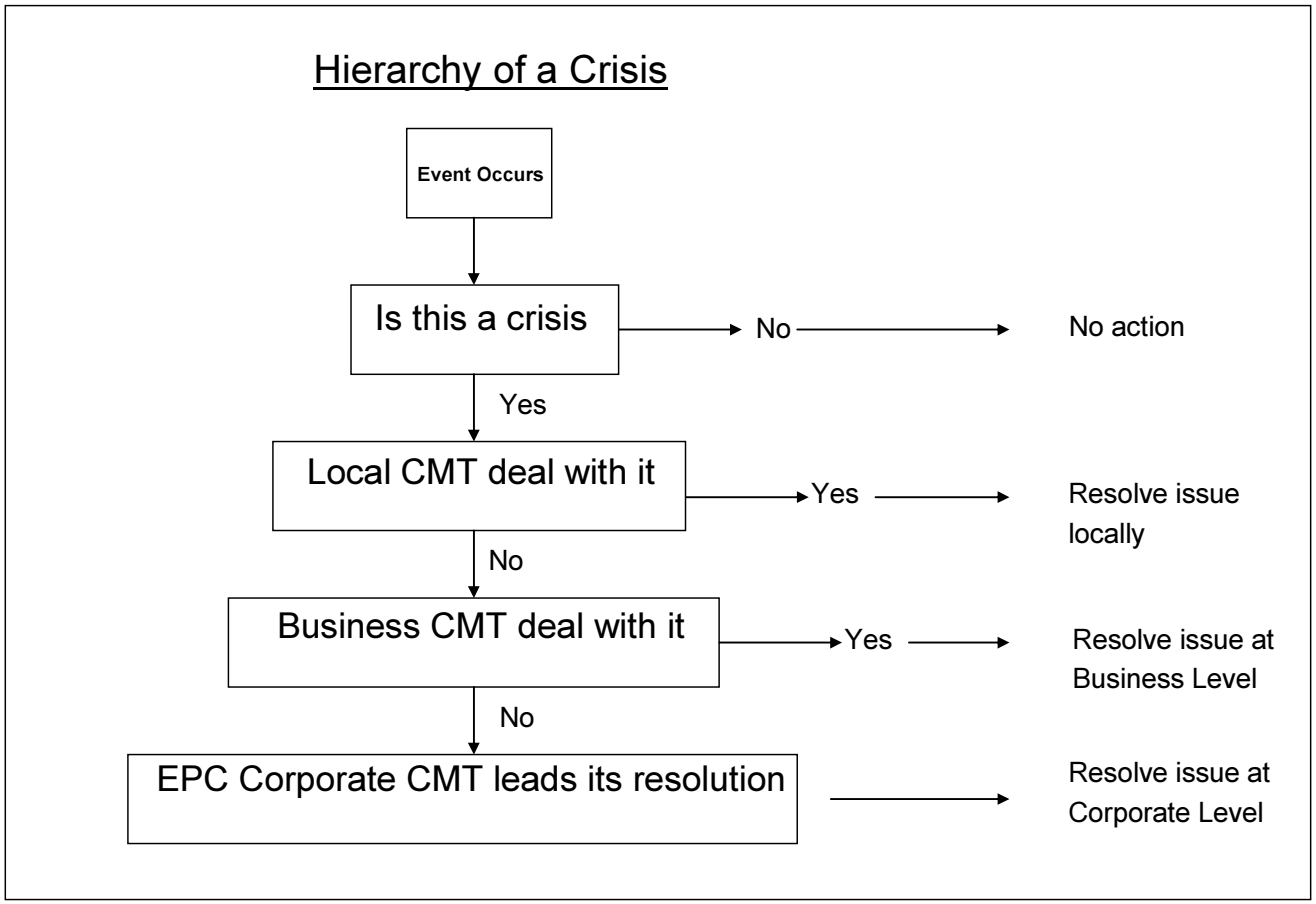
- Up to date assessment of situation
- Possible escalation
- Liaison with emergency services
- Liaison with government safety and environment agencies
- Coordination of mitigation or remediation effort
- Control of information to press and media
- Control of information to local population
- Communication with organisation and other stakeholders



If you have contracted your transport requirements, don't imagine that the problem is not yours.

The Safety Gap - Crisis Management

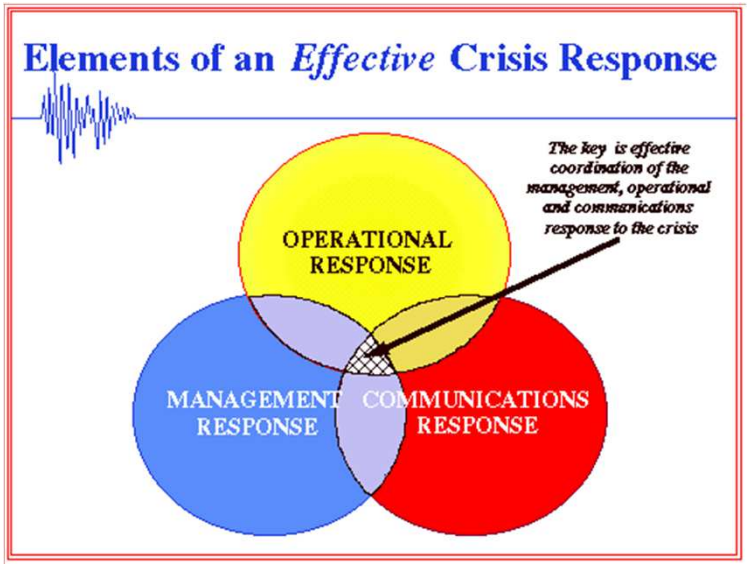
Crisis management teams:



Crisis management is an integral part of Business Continuity Planning

The Safety Gap - Crisis Management

Crisis management teams – Definition of roles:



- Who is nominated to manage the crisis the management team(s) ?
- Who is monitoring the switchboard ?
- Who is monitoring social media ?
- Who is liaising with emergency services and government agencies ?
- Who is recording the management efforts in detail ?
- Who is writing the press statements, is there a PR company on standby ?
- Who is delivering the press statements, are they trained ?
- Are contractors involved, who's controlling them, do they have a Crisis Management Team ?

The Safety Gap - Conclusion

- Evidence exists to verify that transport is a significant risk to your business
- Technology and training can be employed to mitigate some risks
- Drivers are your greatest asset/liability before, during and immediately following an incident
- Use of contractors reduces control and can increase risk (the Safety Gap)
- A crisis management strategy is essential
- ISO28001:2007 is best practice for international supply chains


The Safety Gap - Questions ?

"Failure to have a workable Crisis Management Program is akin to playing Russion Roulette with an automatic pistol. You don't have the luxury of pulling the trigger on an empty chamber."

- Geary Sikich,

"'All Hazards' Crisis Management Planning"