



# Non-conformances found in DMIRS inspections

ISEE meeting Perth

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8 November 2018



# Overview

- Top five inspection deficiencies
- Strategies for being more compliant
- Emerging issue
- DG Decoder App



# Need standards and compliance



# Deficiency No. 1 – placards

## Examples

- No Hazchem signs
- No product placards
- Faded signs (maintenance)
- Insufficient placards
- Entry points not placarded
- Incorrect signage





# Deficiency No. 1 – placards

## Context

- Remote locations
- Hot harsh conditions
- Placarding fades and deteriorates
- Red fades exceptionally well in the sun
- Need to know the contents
- Emergency preparedness



# Incorrect signage



# Deficiency No. 2 – maintenance or hardware

## Examples

- Lack of preventive maintenance:
  - Auger seals leaking
  - Engines powering augers
  - Hoses not tested
  - Pumps not serviced
  - Magazine doors and locks
- ANE tank overflow – overflow system failed



# Deficiency No. 2 – maintenance or hardware

## Context

- Extremely important for equipment to be well maintained
- Moving parts need servicing
- Both safety and security
- When developing maintenance program need to:
  - Identify what requires servicing
  - Frequency of servicing (from OEM)
  - Develop maintenance program
  - Implement
  - Structured and systematic





# Deficiency No. 3 – housekeeping

## Examples

- Weeds and dry grass
- ANE slops in the buckets mixed with rags, leather gloves
- Spillages
- Accumulation of empty packaging
- Placing rubbish bin between two detonator magazines
- Loose explosives.



# Deficiency No. 3 – housekeeping

- Extremely important in preventing incidents
- Very simple to implement
- Where spillages – clean it up
- Empty packaging needs to be correctly disposed of
- **Barometer** to safety culture
- Good safety culture – no housekeeping issues
- Monthly inspections.



# Deficiency No. 4 – emergency response

## Examples

- No joint desktop or mock up drills
- No communication or coordination with mine site ERT
- No consideration of “fight-or-flight” scenarios

## Suggestion

- Include scenarios in tool box meeting



# Deficiency No. 5 – security

## Examples

- Secure nominee list
- Authorisations from secure nominees
- Principal employer not overseeing contractor
- Magazine doors left open (dummy locked)
- Key register discrepancies
- Discrepancies in stock taking not investigated
- AN hopper containing residual AN not locked
- ANE slops waste bin not locked

Name	Date	Key #	Time In	Signature	Time Out
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John Hume	14 Jan 18	10002	08:00	[Signature]	17:00
John Hume	14 Jan 18	10003	08:00	[Signature]	17:00
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John Hume	14 Jan 18	10100	08:00	[Signature]	17:00

No signature to identify the keys return into the safe





# Deficiency No. 5 – security

## Broad principles:

- Only authorised people allowed to access explosives and SSAN
- Explosives and SSAN kept under lock and key unless when supervised
- All explosives must be accounted for
- When not – triggers investigation



# Maintaining compliance – Checklist

- All issues easily resolved
- Develop a comprehensive checklist
- Regulations require monthly inspection
- Include issues discussed
- Some checklists 5 pages long
- Demonstrated proof complying with regulations
- When implemented will result in better compliance
- It will improve safety and security of explosives



# Emerging issue – storage of ANE underground

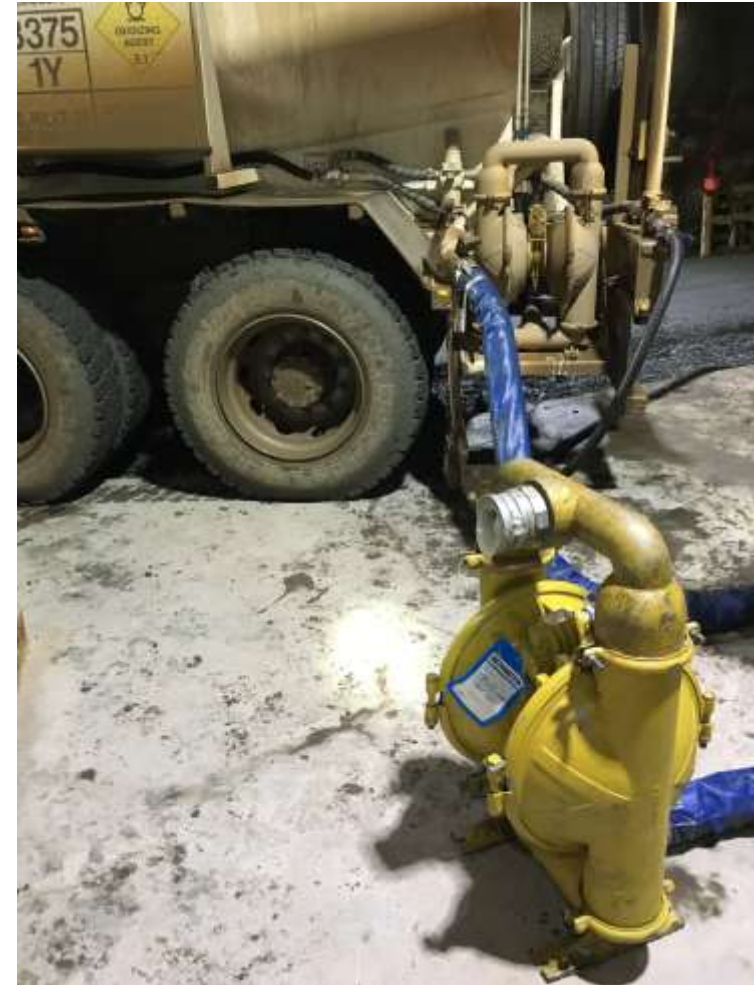
## Context

- ANE can be stored with explosives
- ANE generally replaces ANFO
- Storing ANE safer than ANFO
- ANE is a SSAN
- Require SSAN storage licence for separate storage
- AEISG code for UN3375 recommends storages > 10T to have deluge system
- Deluge system > \$100k
- Magazines already fitted with deluge system
- Simple solution – store the two together.



# Emerging issue – storage of ANE underground

- Although products may be compatible – operations are not
- With ANE storage introducing new hazards in explosives magazine:
  - Bulk delivery trucks
  - Pumping operations
  - Gasser chemicals
  - Making/breaking connections
  - Possible spillages





# What the department is seeing

- ANE stored alongside packaged explosives
- Metal alongside explosives
- Heavy weight alongside packaged product.



# What the department is seeing

- Pumping equipment close to explosives
- Insufficient room between explosives and ANE.



# What the department is seeing

- Vehicles parked close to explosives
- Vehicle fire, tyre, bearing fire now alongside explosives





# What the department is seeing

- Spillages
- Wash down floors
- Doesn't destroy the ANE
- ANE has high water resistance
- Just displaces the ANE
- Accumulation of ANE behind RAW.





# What the department is seeing

- Collapsed pallets
- Wet floors
- Washed ANE
- Wet pallets



# What the department is seeing

- Bollards removed
- Unprotected explosives from vehicle movements
- Vehicles moving close to explosives



# Improvements required

- Changes are required
- Only matter of time before incident occurs
- Don't want an explosion underground
- Operations have to be risk assessed
- Preferable for ANE to be stored separately



# What the department **wants** to see

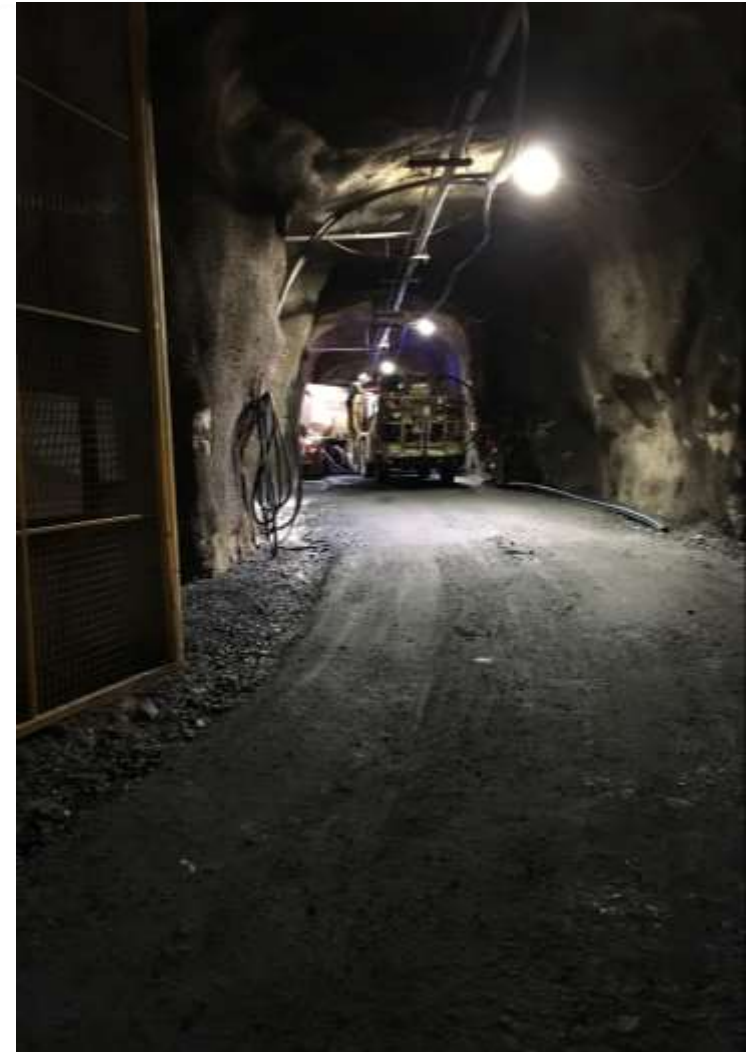
- Separate compartment
- Well segregated from explosives
- Operations of one doesn't impact on the other
- Concrete floor
- Spillages immediately cleaned up
- Good management of spillages
- Gasser chemical away from explosives





# What the department **wants** to see

- Pumping equipment away from explosives
- Vehicle parks away from explosives
- Vehicle spends minimal time in magazine
- Vehicle waits 10 minutes before entering magazine
- Vehicle faces egress
- Can't be left unattended.



# DG Decoder App



# Which DG do you want to transport?



# Class 1 explosives




## EXPLOSIVES TRANSPORT


AUTHORITY TO POSSESS EXPLOSIVES

VEHICLE REQUIREMENTS






# Which explosives Category are you transporting?

 Government of Western Australia  
Department of Mines, Industry Regulation and Safety

 **EXPLOSIVE**


Which explosives Category are you transporting?

(Category is based on explosives type and quantity)

Category 1	
Category 2	
Category 3	

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# Risk Category 3 requirements



# Risk Category 3 requirements



1	Placarding	▼
2	Vehicle features	▼
3	Carry boxes and enclosed vehicle body	▼
4	Safety equipment	▼
5	Fire extinguishers	▼
6	Emergency information	▼
7	Stowage and load restraint	▼
8	Segregation	▼
9	Load limits	▼
10	High security risk loads	▼

10	High security risk loads	▼
11	Licensing	▼
12	Security	▼
13	Explosives management plan	▼
14	Explosives correctly packed and labelled	▼
15	Insurance	▼
16	Handling and vehicle operation	▼
17	Restricted transport routes	▼
18	Passengers	▼
19	Control of ignition sources	▼
20	Stationary vehicles	▼
21	Emergencies and incident notification	▼
22	Ammonium nitrate (AN) and AN emulsions	▼
23	Division 1.1A explosives	▼

**START AGAIN**

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# Placarding

## 1 Placarding

### Display

- A Class 1 reflective class label (250 x 250 mm) and subsidiary risk class label at the front and rear of the vehicle.
- An "EXPLOSIVES" reflective placard (red lettering 150 mm high on a white background) on the:
  - front, rear and both sides of vehicle
  - if a trailer combination, on each side of every trailer or rigid vehicle carrying explosives.
- When required, an Emergency Information Panel (EIP) on:
  - both sides and rear of the vehicle
  - for trailer combinations, on both sides of the trailer and the rear of the vehicle combination (serving as a rear class label).
- If carrying detonators the compartment must be identified accordingly (e.g. display a "DETONATORS" sign or appropriate Class label – 1.1B or 1.4B).

*Note: EIPs required when transporting either:*

- 1,000 kg or more of explosives
- 20,000 or more detonators (Division 1.4 exempted).

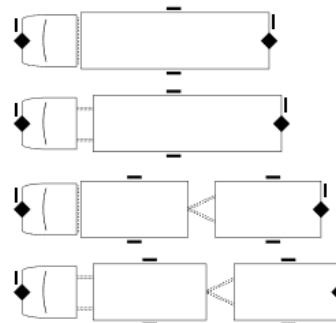
Placarding must be removed or concealed when not transporting explosives.



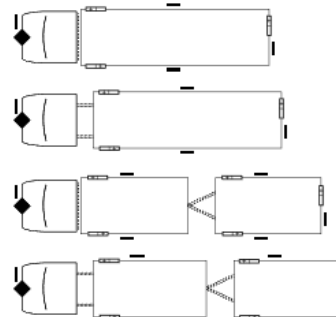
**EXPLOSIVES**



### Placarding for vehicles not requiring an EIP



### Placarding for vehicles requiring an EIP



#### Keys to symbols

- ◆ = Class or Division Label
- ▭ = Emergency Information Panel (EIP)
- = Explosive Sign
- ▭ = Rigid Truck
- ▭ = Prime Mover / Semi Trailer
- ▭ = Trailer, in combination with rigid truck or semi trailer



# Fire extinguishers

## 5 Fire extinguishers ^

Carry in the:

- cabin: 1 x 10B dry powder extinguisher
- load area: 1 x 80B or 2 x 40B dry powder fire extinguishers.

Fire extinguishers to be kept outside the compartment carrying the explosives.

Mount fire extinguishers in properly attached, quick-release brackets.

Fire extinguishers must be serviced every 6 months.



# Summary

- Top 5 non-conformances
  - Placarding
  - Maintenance
  - Housekeeping
  - Emergency response
  - Security
- Checklist – rectifies non-conformances
- Emerging issue – storage of ANE underground
- DG decoder app



# Any burning questions ?



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