



Explosives and Dangerous Goods Act 1961
SUMMARY OF ACCIDENT REPORTS
1995

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SUMMARY OF ACCIDENT REPORTS 1995

SUMMARY OVERVIEW

The Division's long term strategies appear to be holding accident rates at a static level with the rates showing improvement in some patches but generally remaining constant. While this is tolerable the Division and conscientious members of industry are continually looking at ways to make major reductions in accident rates.

The Division has adopted a three pronged approach.

1. The major returns are expected to come from encouraging industry initiatives. Steps in this area are the Plastics and Chemicals Industry Association (PACIA) Responsible Care initiatives which include the promoting of a Cyanide Management Plan across the nation and the development of the Australian Fire Authorities Council National Accident Reporting System.
2. By fostering training the biggest single contributor to accidents should be reduced. Operator error, or more correctly failure to follow standard operating procedures is being addressed by the transport industry requiring refresher courses for drivers and by bringing in broader training throughout the whole transport chain for package transport. Training in emergency procedures is also taking place in the storage industry.
3. Prosecution remains a motivator of last resort which is increasingly being used by the Division.

The result of these strategies can only be measured over many years, however we can take some heart from the statistical trends which shows that industry's size is increasing but the accident rate is not.

One crash warrants special mention in this overview; a crash which in fact resulted in no loss of product and in which no one was hurt. Accident W9/95 had all the elements for a major disaster:

- it occurred at morning peak hour;
- on a traffic bridge over the Kwinana Freeway;
- on the edge of the Canning River where it joins the Swan River; and
- it involved two tanker vehicles, both loaded with petrol.

It is a tribute to this State's emergency responders and the Western Australian Hazardous Materials Emergency Management Scheme that the crash was cleaned up with minimal disruption to the public or the environment.

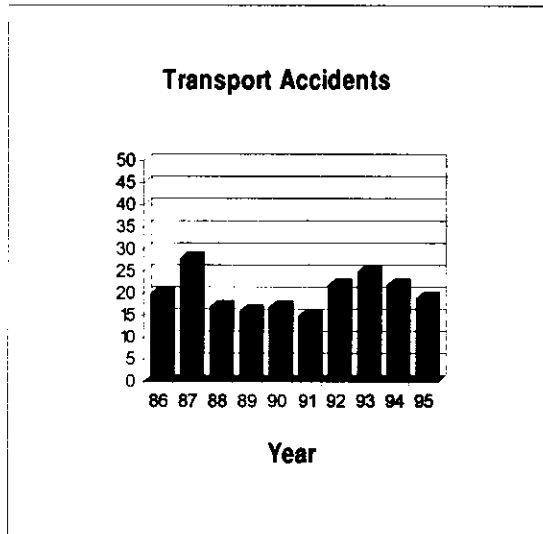
There are increasing numbers of these good management (not good luck) stories occurring as the education and training policies of groups like the PACIA, the Agricultural and Veterinary Chemicals Association (AGSAFE) and regulatory authorities have more effect.



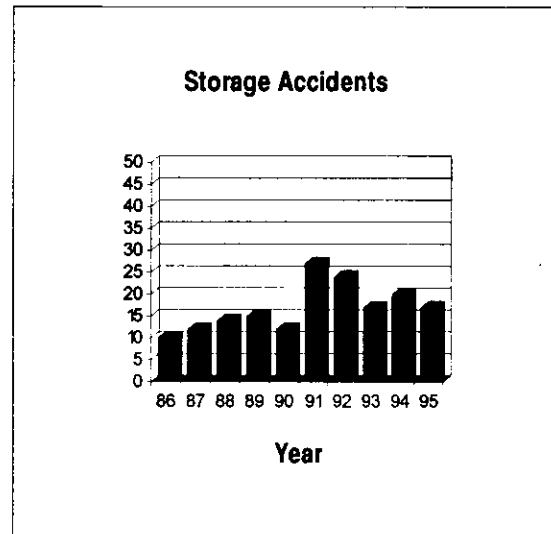
K Price
Director
Explosives and Dangerous Goods Division

7 May, 1996

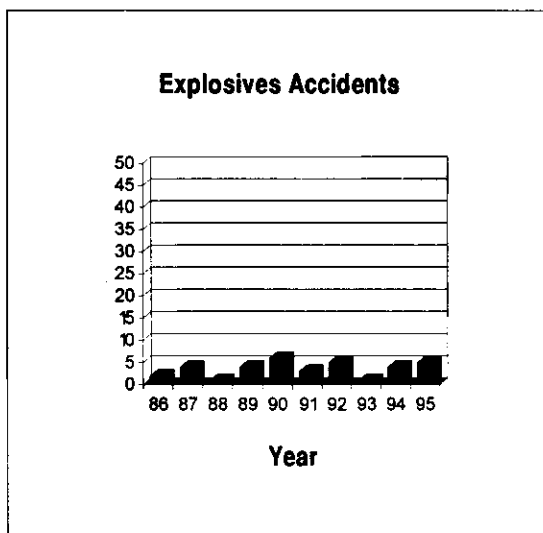
EXPLOSIVES AND DANGEROUS GOODS ACCIDENT STATISTICS



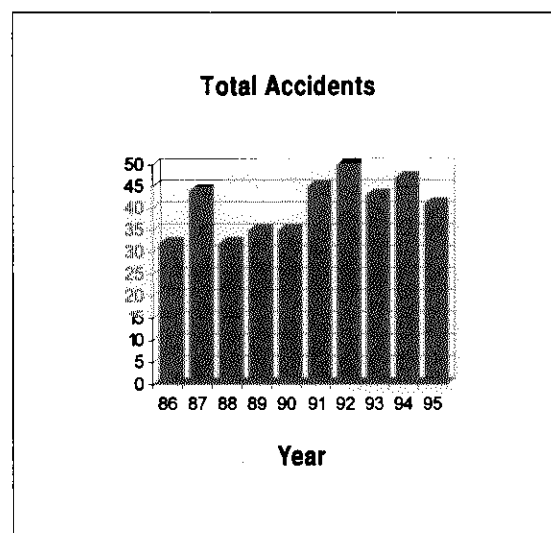
The number of dangerous goods transport accidents reported in 1995 was again less than the number reported in the previous year. However, this number is comparable with the ten year average of approximately 20. Surprisingly, many of the accidents appear to be grouped in the months of January (6), June/July (6) and November (4).



The number of storage accidents recorded in 1995 was slightly less than that reported in the previous the year. The "Major Hazard Sites" contributed only three accidents to the overall total which is consistent with that recorded in previous years.



The number of accidents recorded for 1995 is comparable with the numbers recorded in previous years, however the low overall numbers do not allow for accurate trends to be drawn.



The total number of accidents reported for 1995 was less than that for 1994 and is consistent with the overall recorded average of approximately 40.

EXPLOSIVES ACCIDENTS

INTRODUCTION

Five explosives accidents were reported to the Division in 1995 compared with four in 1994.

One incident in which detonators were initiated by sparks from a grinding operation in a workshop highlighted the purpose of safety regulations. The regulations require small quantities of detonators to be stored in appropriately built locked wooden boxes at all times when they are not being used. If this requirement had been complied with, the incident would not have occurred.

In another incident, the value of the safety regulations was demonstrated. The requirement to segregate explosives and detonators by an approved device whilst they are being transported prevented some detonators from initiating a load of explosives when the truck on which they were being carried, caught fire.

The ban on the sale and use of sparklers was lifted mid way through the year for an 18 month trial - to date no incidents involving sparklers have been reported.

EXPLOSIVES ACCIDENTS SUMMARY REPORT

FOR YEAR 1995

	DATE	LOCATION	GOODS	CLASS	COMMENTS
W1/95	04/05/1995	KALGOORLIE	Non Sensitised Emulsion Product	5.1	The driver of an explosives mixing vehicle failed to negotiate a corner resulting in the vehicle rolling over and spilling bulk emulsion product.
W3/95	16/05/1995	NORTHAMPTON	Detonators	1.1	A man received shrapnel injuries and lost an eye when over 150 detonators exploded when initiated by sparks from a grinder.
W2/95	25/05/1995	ARGYLE	Ammonium Nitrate	5.1	Two employees were injured, one seriously, as a result of an explosion from the mixing of waste chemicals.
W4/95	08/08/1995	ROCKINGHAM	Fireworks	1.4	Three boys suffered burns after lighting powder scraped out of spent fireworks which were left on vacant land after a fireworks display.
W5/95	25/11/1995	PORT HEDLAND	Boosters	1.1	A vehicle conveying explosives caught fire and was completely destroyed, just south of Port Hedland.

EXPLOSIVES ACCIDENT REPORT

Date : 04 May 1995 **Time** : 0600hrs

Location : Mount Monger Road
KALGOORLIE

Explosives Involved : NON SENSITISED EMULSION PRODUCT

Class 5.1

Compatibility Group

UN No. 3139

Quantity Present : 9000 kg

Quantity Involved : 9000 kg

SCENARIO :

The driver of an explosives mixing vehicle failed to negotiate a right hand turn when he misjudged the distance on approaching a T-junction.

The vehicle rolled over and upon impact with the ground the lid of the emulsion tank broke open. The vehicle was fully loaded at the time and as a result, approximately 9 tonnes of emulsion product was spilt.

The spilt product was recovered and returned to the Kalgoorlie Explosives Reserve for disposal.

The driver and his assistant suffered minor injuries.

EX : W1/95

File No. : 103/95

EXPLOSIVES ACCIDENT REPORT

Date : 25 May 1995 **Time** : 1400 hrs

Location : Argyle Diamond Mine
ARGYLE

Explosives Involved : AMMONIUM NITRATE

Class 5.1

Compatibility Group III

UN No. 1942

Quantity Present : 90 kg

Quantity Involved : 90 kg

NON-SENSITISED BULK EMULSION

Class 5.1

Compatibility Group III

UN No. 3139

Quantity Present : 30 kg

Quantity Involved : 30 kg

SODIUM NITRITE

Class 5.1

Compatibility Group III

UN No. 1500

Quantity Present : 15 kg

Quantity Involved : 15 kg

SCENARIO :

Two employees were injured, one seriously, when a container of waste chemicals that was smouldering, exploded. Investigation into the incident showed that the mixing of waste products led to an adverse chemical reaction resulting in an explosion. It was found that an employee requiring an empty container inadvertently mixed a container holding sweepings of emulsion product mixed with ammonium nitrate together with a container holding a highly concentrated solution of sodium nitrite

Two hours after mixing the products, smoke was observed emanating from the container and whilst approaching the area with fire extinguishers the mixture exploded injuring the two employees. One suffered compound fractures to both legs, just above the ankles, from flying debris and the other received superficial injuries. Both men were flown to Darwin Hospital.

This incident has highlighted the need for training in the disposal of waste chemicals and the labelling of containers.

EX : W2/95

File No. : 110/95

EXPLOSIVES ACCIDENT REPORT

Date : 25 November 1995 **Time** : 1505 hrs

Location : Great Northern Highway, 22 km South of
PORT HEDLAND

**Explosives
Involved** : BOOSTERS

 Class 1.1

 Compatibility Group D

 UN No. 0042

 Quantity Present : 200 kg

 Quantity Involved : 200 kg

 SIGNAL TUBE DETONATORS

 Class 1.1

 Compatibility Group B

 UN No. 0360

 Quantity Present : 1350

 Quantity Involved : 1350

SCENARIO :

An explosives vehicle caught fire approximately 20 kilometres south of Port Hedland. The driver of the vehicle noticed smoke emanating from the right hand rear of the pantechnicon and immediately stopped the vehicle. He attempted to put out the fire using a fire extinguisher from the trailer but was unsuccessful. The driver then opened a door on the opposite side of the vehicle and jumped in to attempt to extinguish the flames but the heat forced him back. Realising that he could not extinguish the fire, he then lowered the legs on the trailer, unhooked the turntable and drove the prime mover away to a safe distance. The driver then warned other motorists to keep clear and organised a passing motorist to contact the emergency services.

The fire brigade attended and the area was cleared to a safe distance. The vehicle burned for several hours before emergency service personnel could approach it. Detonators were heard 'popping' but there was no mass explosion. The explosives barrier between the detonator compartment and the explosives compartment helped prevent exploding detonators from initiating boosters. The driver suffered minor burns to his hands and face as a result of the fire. The cause of the fire was not established but it is known that it originated in the explosives compartment.

EX : W5/95

File No. : 201/95

DANGEROUS GOODS STORAGE ACCIDENTS

INTRODUCTION

Seventeen accidents involving the storage of dangerous goods were reported to the Division in 1995, compared with 20 for 1994 and 17 in 1993.

A major incident during the year involved extensive property damage and injury following a fire in an ethanol store at a winery. Regrettably the fire, which was confirmed to be arson, resulted in a leg amputation for a fire fighter.

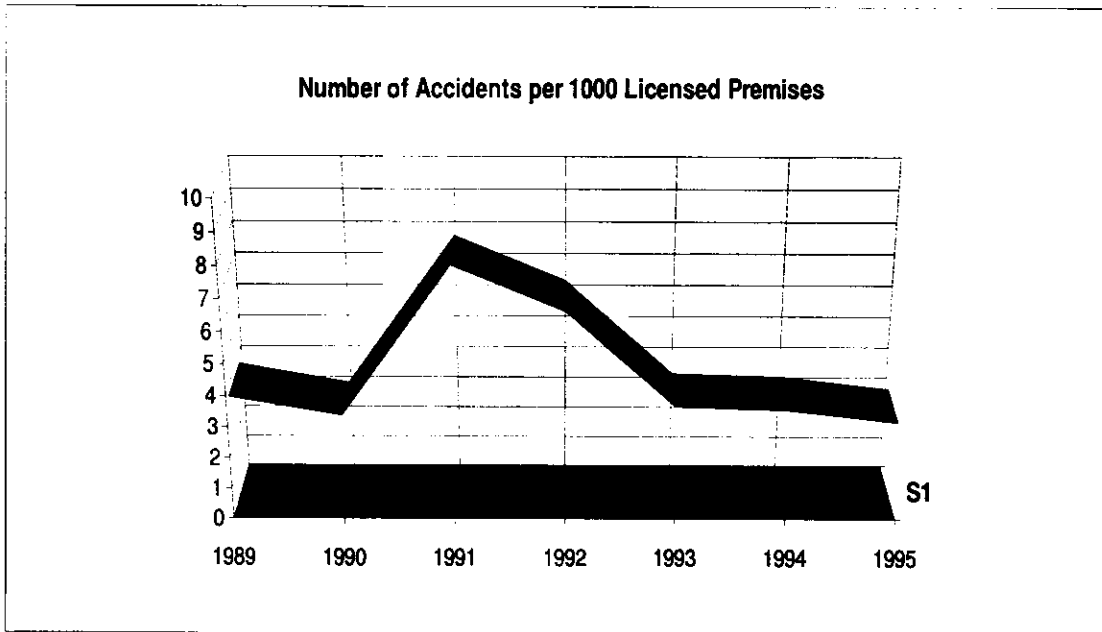
Another significant incident caused the evacuation of a swimming pool complex following the release of chlorine gas. A mechanical failure in the chlorination system allowed hypochlorite solution and sulphuric acid to mix, generating chlorine gas. This gas was released into the pool in one dose when the equipment was re-started after mechanical repairs.

Independent of this incident, the Division has identified chlorine gas storage as an area of potentially significant risk and has targeted metropolitan and country facilities for inspection. Various strategies for increasing compliance of chlorine storages have been implemented. The Division will report on its effectiveness in this area in its annual report.

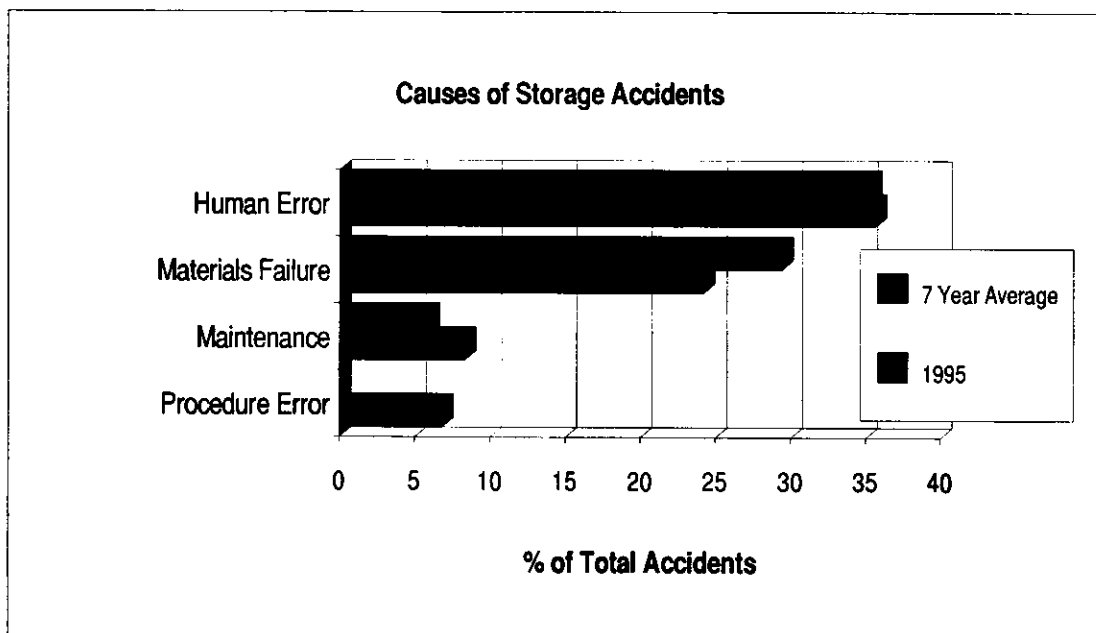
Two very similar incidents involved the spillage of diesel fuel from elevated tanks. In both cases, heavy rains undermined tank supports leading to the collapse of the tank and subsequent spill of product. These incidents have highlighted the importance of site selection and foundation susceptibility when installing fuel tanks.

Two incidents involved the leakage of diesel fuel from underground storage tanks or their fittings. These incidents have highlighted the need for operators to implement inventory control systems which will identify leaks as soon as they occur, limiting the extent of environmental contamination.

SELECTED STORAGE ACCIDENT STATISTICS



Ignoring the 1991/92 peaks it appears the 'normal' accident rate is in the order of 3 accidents per 1000 licensed premises. Whilst little can be drawn from this statistic at present, it will provide a very useful baseline for comparison in future years as the regulatory approach varies and more responsibility for safety management is placed with industry.



Human error (failure to follow standard operating procedures) continues to be a major causal group of accidents. The Division's plans to reduce the percentage of accidents attributable to human error focus on the development of formal procedures and on the need for training and re-training.

DAINGEROUS GOODS STORAGE ACCIDENTS SUMMARY REPORT

For the Year 1995

	DATE	LOCATION	GOODS	CLASS	COMMENTS
W1/95	15/01/1995	LEINSTER	Diesel Fuel	3.3	An elevated diesel storage tank collapsed, spilling its contents, due to the undermining of the tank's support foundations by torrential rain.
W2/95	28/01/1995	CAVERSHAM	Ethanol	3	A fire broke out in an ethanol store at a winery causing extensive damage. Investigation determined arson to be the cause.
W3/95	13/02/1995	SOUTH HEDLAND	Chlorine	2.3	A chlorine gas leak occurred from a effluent treatment station when a pressure gauge on a chlorine pipeline burst.
W5/95	24/02/1995	MINDARIE	Diesel Fuel	3.3	Diesel fuel leaked from a pipeline valve on a storage tank supplying an offshore dispenser. The spilt fuel was recovered before it could reach the ocean.
W6/95	02/03/1995	MOUNT CLAREMONT	Hypochlorite Solution	8	Swimmers at a suburban swimming pool complex were effected by chlorine gas which was evolved when sodium hypochlorite and sulphuric acid were inadvertently mixed in a filter manifold.
W4/95	03/03/1995	KALGOORLIE	Diesel Fuel	3.3	A minesite diesel storage tank collapsed and spilt its contents after extensive flooding undermined the foundation for the tank supports.
W18/95	17/05/1995	KWINANA	Titanium tetrachloride	8	A release of titanium tetrachloride occurred in a chemical plant when a process valve failed.
W8/95	29/05/1995	HERNE HILL	Diesel Fuel	3.3	A vehicle travelling up an incline lost power and rolled backwards, impacting with a bund wall and puncturing a diesel tank.
W13/95	07/06/1995	KWINANA	Ammonia, Anhydrous	2.3	Ammonia was released from relief valves when a level transmitter failed and an associated control valve passed hot ammonia gas into a storage tank.
W7/95	01/07/1995	KWINANA	Petrol	3	Petrol was spilt when an operator at a large fuel terminal failed to check a bleed valve on a pipeline prior to commencing product transfer.

DANGEROUS GOODS STORAGE ACCIDENTS SUMMARY REPORT

	DATE	LOCATION	GOODS	CLASS	COMMENTS
W9/95	18/08/1995	HAMERSLEY RANGE	Liquified Petroleum Gas	2.1	A small LPG leak occurred when an unattended truck parked on an incline rolled down the slope striking storage tank and damaging associated pipework.
W16/95	15/09/1995	WEST PERTH	Anhydrous Ammonia	2.3	A small leak of ammonia gas occurred when liquid ammonia, trapped in the crank case of a compressor, boiled and expanded which led to the failure of a shaft seal.
W15/95	15/09/95	PORT HEDLAND	Chlorine	2.3	Chlorine leaked from a storage drum due to the malfunction of a chlorine heater at a chlorination plant.
W12/95	01/10/1995	KWINANA	Hydrogen, Compressed	2.1	A build up of pressure and subsequent explosive decompression and fire from a hydrogen gas compressor injured several staff at a chemical processing plant.
W10/95	04/11/1995	WONGAN HILLS	Flammable Liquid, Poisonous, N.O.S.	3	An isotainer, at an agricultural research station, containing a mixture of pesticides failed allowing its contents to spill out onto the ground and soak into the surrounding soil.
W11/95	24/11/1995	KEWDALE	Paint Related Material (Solvent)	3	An employee at a paint factory received third degree burns when solvent, which he had spilled on his clothing, ignited.
W17/95	01/12/1995	JOONDALUP	Diesel Fuel	3.3	The failure of an underground fuel line coupling at a fuel storage depot led to approximately 1000 litres of diesel being spilt into the surrounding soil.
W14/95	08/12/1995	SPEARWOOD	Diesel Fuel	3.3	A fork-lift carrying a large metal beam struck an elevated diesel tank while manoeuvring out of a factory door, leading to the loss of the tank's entire contents.

DANGEROUS GOODS STORAGE ACCIDENTS REPORT

Date : 15 January 1995 **Time** : 1230 hrs

Location : Mine Site
LEINSTER

Dangerous Goods Involved : DIESEL FUEL
Class 3.3
Sub-Risk -
UN No.
Packaging Group : -
Quantity Involved : 10000 litres
Quantity Spilled : 10000 litres

SCENARIO :

A 10000 litre diesel storage tank collapsed and spilt its contents following torrential rain.

A storm struck the mine site dropping 67 millimetres of rain, leading to the flow of water around the support legs of the tank. The flow of water undermined one of the support legs on the elevated diesel tank which resulted in the tank collapsing.

All of the spilt diesel was retained within the bunded area and was pumped out into temporary storage tanks later the same day. Contaminated fuel and soil was removed from site for disposal.

DGAS : W1/95

File No. : 6/95

DANGEROUS GOODS STORAGE ACCIDENTS REPORT

Date : 28 January 1995 **Time** : 2200 hrs

Location : Benara Road
CAVERSHAM

Dangerous Goods Involved : ETHANOL
Class 3
Sub-Risk -
UN No. 1170
Packaging Group : II
Quantity Involved : 40000 litres
Quantity Spilled : 40000 litres

SCENARIO :

A fire broke out in a winery at Caversham and quickly spread to 200 litre drums of ethanol which were used to make fortified wines.

The fire quickly raged out of control with many of the drums of ethanol exploding into balls of flame before the fire brigade could arrive to fight the blaze.

Three fire brigade officers were rushed to hospital after being seriously injured when a brick wall collapsed during the height of the blaze.

Fire fighters took several hours to bring the blaze under control and the winery was extensively damaged. Investigation into the incident by the Police Arson Squad proved that the fire was deliberately lit.

DGAS : W2/95

File No. : 18/95

DANGEROUS GOODS STORAGE ACCIDENTS REPORT

Date : 13 February 1995 **Time** : 0700 hrs
Location : Bosna Lodge Road
 SOUTH HEDLAND
Dangerous Goods Involved : CHLORINE
 Class 2.3
 Sub-Risk 5.1
 UN No. 1017
 Packaging Group : -
 Quantity Involved : 920 kg
 Quantity Spilled : 400 kg

SCENARIO :

A chlorine leak occurred at an effluent treatment station after a pressure gauge on a chlorine pipeline burst.

Two maintenance workers who arrived on site noticed that an audible chlorine detection alarm had activated. The workers evacuated the area and notified a supervisor of the leak. The supervisor proceeded to the site equipped with self contained breathing apparatus and detected chlorine from approximately 100 metres away.

The fire brigade was notified and a valve on the pipeline was closed to stop the leak. The failed pressure gauge was replaced and the all-clear was given.

DGAS : W3/95

File No. : 28/95

DANGEROUS GOODS STORAGE ACCIDENTS REPORT

Date : 02 March 1995 **Time** : 1145 hrs

Location : Stephenson Avenue
MOUNT CLAREMONT

Dangerous Goods Involved : HYPOCHLORITE SOLUTION

Class 8

Sub-Risk -

UN No. 1791

Packaging Group : III

Quantity Present : 7500 litres

Quantity Involved : 25 litres

SULPHURIC ACID

Class 8

Sub-Risk -

UN No. 1830

Packaging Group : II

Quantity Present : 1200 litres

Quantity Involved : 2 litres

SCENARIO :

Incompatible products were inadvertently mixed at a suburban swimming pool complex, causing a release of chlorine gas.

Sodium hypochlorite solution and sulphuric acid were dosed into a filter manifold while the pump mechanism was inoperable and pool water was not circulating through the system. The pool water circulation had ceased following the failure of heat exchange pipework.

After pipework repairs, the pool water circulation was restarted allowing the incompatible mixture to be pumped into the swimming pool while swimmers were present. The mixing of these products led to a reaction which evolved chlorine gas, affecting swimmers using the pool.

The affected swimmers were treated by pool staff and 19 swimmers were taken by ambulance to hospital for observation and treatment.

Operational and design changes have been implemented to prevent a recurrence.

DGAS : W6/95

File No. : 66/95

DANGEROUS GOODS STORAGE ACCIDENTS REPORT

Date : 03 March 1995 **Time** : 0800 hrs

Location : Minesite, North West of
KALGOORLIE

Dangerous Goods Involved : DIESEL FUEL
Class 3.3
Sub-Risk -
UN No.
Packaging Group : -
Quantity Involved : 13000 litres
Quantity Spilled : 13000 litres

SCENARIO :

The support structure of a 15 kilolitre elevated diesel storage tank collapsed following torrential rain and subsequent flooding which destabilised underlying soil.

The tank was pierced on impact allowing the entire 13000 litres of diesel within it to escape. The spilt diesel was retained within the earth bund and soaked into the soil. The contaminated soil was later removed from site for disposal.

Due to the remote nature of the site there was no threat to public safety and no contamination of drinking or ground water.

The company involved has reviewed the flood susceptibility of their storage to prevent a recurrence.

DGAS : W4/95

File No. : 48/95

DANGEROUS GOODS STORAGE ACCIDENTS REPORT

Date : 29 May 1995 **Time** : 1340 hrs

Location : Concrete Quarry
HERNE HILL

Dangerous Goods Involved : DIESEL FUEL
Class 3.3
Sub-Risk -
UN No.
Packaging Group : -
Quantity Involved : 37800 litres
Quantity Spilled : 1500 litres

SCENARIO :

An overloaded vehicle transporting a cargo of manganese lost power while travelling up an incline on a quarry site. The driver of the vehicle attempted to engage a lower gear to gain more power but the vehicle started to roll backwards.

The driver jumped from the vehicle after unsuccessfully trying the hand and foot brakes. The vehicle rolled out of control down the hill and swung towards a diesel storage tank.

The vehicle impacted with a bund wall surrounding the diesel storage tank causing the load of manganese to leave the vehicle tray and puncture the diesel tank. Tank supports, a diesel pump and the bund wall were also extensively damaged allowing diesel to escape from the bund.

Power to the site was cut off while site personnel stemmed the flow of diesel using granite road base. Salvage operators were then called in to remove the remaining fuel from the damaged tank and to dispose of contaminated diesel and soil.

The driver suffered only minor injuries as a result of leaping from the moving vehicle. The company has now placed protective bollards around the diesel tank bund and has implemented a more rigorous vehicle inspection program to prevent a recurrence.

DGAS : W8/95

File No. : 132/95

DA NGER OUS GOODS STORAGE ACCIDENTS REPORT

Date : 17 May 1995 **Time** : 2020 hrs
Location : Mason Road
 KWINANA
Dangerous Goods Involved : TITANIUM TETRACHLORIDE
 Class 8
 Sub-Risk -
 UN No. 1838
 Packaging Group : II
 Quantity Present : N/A
 Quantity Involved : 2 kg

SCENARIO :

A release of titanium tetrachloride occurred from a chemical plant when a gearbox on a chlorination process isolation valve failed. This allowed titanium tetrachloride to backflow into a sump tank where it reacted with water.

A vacuum hose associated with the maintenance work on the chlorinator dislodged, due to a sudden surge in pressure, resulting in the release of titanium tetrachloride.

The site emergency plan was activated and neighbours were notified of the release. The emergency responders had the incident controlled promptly and no injuries were reported.

The company has reviewed the process isolation procedures and equipment alternatives in order to prevent a recurrence.

DGAS : W18/95

File No. : 165/94

DANGEROUS GOODS STORAGE ACCIDENTS REPORT

Date : 07 June 1995 **Time** : 0630 hrs
Location : Rockingham Road
 KWINANA
Dangerous Goods Involved : AMMONIA, ANHYDROUS
 Class 2.3
 Sub-Risk 8
 UN No. 1005
 Packaging Group : -
 Quantity Involved : 10000 tonnes
 Quantity Spilled : 7 tonnes

SCENARIO :

A release of ammonia occurred during the recommissioning of an ammonia plant when a level controller associated with an ammonia catchpot vessel failed.

Hot ammonia vapour flowed downstream into let down vessels which caused the pressure to rise within the vessels resulting in a release of ammonia from relief valves.

The hot ammonia gas also flowed to an ammonia storage tank through the ammonia catchpot level control valve which did not seal properly. This caused the pressure to rise which caused the relief valves to vent for approximately thirty five minutes.

The plant operators isolated the catchpot outlet valve and compressors were put on line to reduce the vapour space pressure until the fault could be rectified.

DGAS : W13/95

File No. : 12/96

DA NGER OUS GOODS STORAGE ACCIDENTS REPORT

Date : 01 July 1995 **Time** : 0510 hrs
Location : Patterson Road
 KWINANA
Dangerous Goods Involved : PETROL
 Class 3
 Sub-Risk -
 UN No. 1203
 Packaging Group : II
 Quantity Involved : 600,000 litres
 Quantity Spilled : 38,000 litres

SCENARIO :

A spill of petrol occurred when an operator at a large fuel terminal began transferring petrol from one storage tank to another while a bleed valve was left open.

All of the spilt product was contained within the bunded area of the tank depot. The operator was not aware that the spill had occurred until emergency services personnel arrived on site, having been alerted by a neighbour. Foam was applied to the spill in order to prevent ignition and the spilled product was later pumped into recovery tanks.

Following the incident, the product transfer procedure at the terminal was reviewed and updated to prevent a recurrence. The operator was also issued with a formal reprimand by the company, which was considered sufficient in this instance in lieu of prosecution by the Division.

DGAS : W7/95

File No. : 130/95

DANGEROUS GOODS STORAGE ACCIDENTS REPORT

Date : 18 August 1995 **Time** : 0630 hrs

Location : Great Northern Highway
HAMERSLEY RANGE

Dangerous Goods Involved : LIQUEFIED PETROLEUM GAS
Class 2.1
Sub-Risk -
UN No. 1075
Packaging Group : -
Quantity Involved : 3000 litres
Quantity Spilled : 40 litres

SCENARIO :

An unattended truck, parked uphill of an LPG tank at a remote country roadhouse, rolled down the decline and struck a steel barrier around a gas tank while the driver was inside the roadhouse.

The impact damaged the pump and pipework associated with the gas tank and caused the gas tank itself to be knocked from its foundations onto a 45 degree angle.

The emergency shut off system (which is a standard safety feature in LPG storage facilities) was activated to shut off the main liquid outlet valve of the tank.

The tank area was isolated for a short period to allow the small amount of product left in the pump and pipework to safely disperse.

After the gas had dispersed, the pump and pipework were disconnected and a crane was used to right the tank.

DGAS : W9/95

File No. : 39/95

DA NGER OUS GOODS STOR AGE ACC IDENTS REP ORT

Date : 15 September 1995 **Time** : 1830 hrs

Location : Carr Street
WEST PERTH

Dangerous Goods Involved : ANHYDROUS AMMONIA
Class 2.3
Sub-Risk 8
UN No. 1005
Packaging Group : -
Quantity Involved : 300 kg
Quantity Spilled : 3 kg

SCENARIO :

A small quantity of liquid ammonia was lost when a shaft seal on a compressor failed on a refrigeration plant.

Liquid ammonia trapped in the crank case of a compressor boiled after the refrigeration system was shut down in order to remove a cooling tower. The rapid expansion of ammonia as it changed from liquid to gas caused the seal to fail leading to a leak of ammonia.

A neighbour detected the leak and notified the emergency services who attended the site. The premise's owners were contacted and attended the site to rectify the problem.

New procedures for refrigeration system shut down have been put in place to prevent a recurrence.

DGAS : W16/95

File No. : 21/96

DANGEROUS GOODS STORAGE ACCIDENTS REPORT

Date : 15 September 1995 **Time** : 1000 hrs

Location : McGregor Street
PORT HEADLAND

Dangerous Goods Involved : CHLORINE
Class 2.3 Poisonous Gas
Sub-Risk 5.1
UN No. 1017
Packaging Group : -
Quantity Present : 1600 litres
Quantity Involved : 400 litres

SCENARIO :

Chlorine leaked from a 920 kilogram chlorine drum when a chlorine heater, connected to the drum, malfunctioned allowing a valve to freeze over.

At the time of the leak two personnel were working in another section of the compound and could not see the flashing light of the leak detector. Later the leak was noticed and the alarm was raised.

The Fire Brigade attended the scene and while wearing full protective clothing, shut off the leak. The chlorination system was shut down and the tank was disconnected from the system.

The two men working within the compound were later taken to hospital for a precautionary examination. Sirens and automatic dialling alarms have now been fitted to all of the chlorination plants to prevent a recurrence.

DGAS : W15 /95

File No. : 179/95

DA NGER OUS GOODS STORAGE ACCIDENTS REPORT

Date : 01 October 1995 **Time** : 1750 hrs
Location : Mason Road
 KWINANA
Dangerous Goods Involved : HYDROGEN, COMPRESSED
 Class 2.1
 Sub-Risk -
 UN No. 1049
 Packaging Group : -
 Quantity Involved : 300 litres
 Quantity Spilled : 300 litres

SCENARIO :

A cylinder head of a gas compressor failed, resulting in explosive decompression and fire as the compressor was being started after maintenance.

Six employees and a security officer were injured as a result of the accident with the most serious injuries being ruptured ear drums and shock. The compressor and adjacent area were also extensively damaged as a result of the fire.

Investigations into the accident showed that the primary cause was the installation of one of the discharge valves in the reverse direction. This resulted in the build up of pressure within the cylinder.

The company involved has implemented revised procedures and has modified the valving arrangements to ensure that it can only be inserted in the correct orientation.

DGAS : W12/95

File No. : 11/96

DANGEROUS GOODS STORAGE ACCIDENTS REPORT

Date : 04 November 1995 **Time** : 0900 hrs
Location : Wongan Hills Research Station
 WONGAN HILLS
Dangerous Goods Involved : FLAMMABLE LIQUID, POISONOUS, N.O.S.
 Class 3
 Sub-Risk 6.1
 UN No. 1992
 Packaging Group : II
 Quantity Involved : 18000 litres
 Quantity Spilled : 18000 litres

SCENARIO :

The total contents of a tank container storing recovered waste pesticides formulation leaked out onto the ground at an agricultural research station. The tank was not banded at the time of the incident resulting in the product spreading out and absorbing into the surrounding sand.

The tank containing the pesticide was to be transported to an incinerator facility for destruction some 6 months earlier, however this was postponed due to some delays at the facility.

The exact cause of the spill has not been determined although corrosion of the tank is suspected. The tank will be metallurgically examined to determine the cause of the tank failure.

DGAS : W10/95

File No. : 192/95

DANGEROUS GOODS STORAGE ACCIDENTS REPORT

Date : 24 November 1995 **Time** : 1845 hrs

Location : Tipping Road
KEWDALE

Dangerous Goods Involved : PAINT RELATED MATERIAL (SOLVENT)

Class 3

Sub-Risk -

UN No. 1263

Packaging Group : II

Quantity Involved : 200 litres

Quantity Spilled : 20 litres

SCENARIO :

An employee at a paint processing workshop was seriously injured when solvent, that he had spilled on his clothing, ignited.

The operator was filling 20 litre containers with solvent from a 200 litre drum when he accidentally spilled a small quantity of solvent onto his clothing. The operator then transferred the solvent from the 20 litre containers into a 1000 litre open blending tank which was situated on the tynes of an idling forklift.

After taking a few steps away from the transfer area towards the forklift, the solvent on the man's clothing caught fire leaving the man with serious burns.

Investigation into the incident identified a number of possible causes of the fire including a static electricity discharge, ignition from the forklift and a cigarette lighter found in the pocket of the injured operator.

Further investigations are being conducted in an attempt to ascertain the precise source of ignition.

DGAS : W11/95

File No. : 196/95

DANGEROUS GOODS STORAGE ACCIDENTS REPORT

Date : 01 December 1995 **Time** : 1000 hrs
Location : Winton Road
 JOONDALUP
Dangerous Goods Involved : DIESEL FUEL
 Class 3.3
 Sub-Risk -
 UN No.
 Packaging Group : -
 Quantity Involved : 158000 litres
 Quantity Spilled : 1000 litres

SCENARIO :

A leak developed from an underground pipe coupling at a diesel storage facility allowing approximately 1000 litres of diesel to leak out into the surrounding soil.

The leak was noticed only after a discrepancy was identified between the meter balance and the tank balance. The Depot Clerk then carried out a check of the area and noticed a strong smell of diesel in the area of the fuel outlet pipe in the bunded area.

Further investigation found a fuel leak from a pipe coupling approximately 600 millimetres below the ground surface.

The fuel was shut off and the company arranged for the contaminated soil to be removed. Soil contamination assessments will be carried out on the site to ensure that all contamination has been removed.

DGAS : W17/95

File No. : 27/96

DAINGEROUS GOODS STORAGE ACCIDENTS REPORT

Date : 08 December 1995 **Time** : 0120 hrs
Location : Wellard Road
 SPEARWOOD

 DIESEL FUEL

 Class 3.3

 Sub-Risk -

 UN No.

 Packaging Group : -

 Quantity Involved : 4000 litres

 Quantity Spilled : 4000 litres

SCENARIO :

A fork-lift carrying a heavy metal beam struck an elevated diesel tank while manoeuvring out of a doorway at a galvanising factory.

The force of the impact dislodged the tank from its support foundations and damaged the tank fittings allowing the entire contents of the tank to be spilt.

The fire brigade was contacted and attended the site. A salvage contractor was contacted and was engaged in the removal of the contaminated soil. Fortunately, no product reached the drainage system and there was no contamination of groundwater.

DGAS : W14/95

File No. : 14/96

DAINGEROUS GOODS TRANSPORT ACCIDENTS

INTRODUCTION

Twenty transport incidents were reported to the Division during 1995. Two of these incidents occurred during rail transport and 18 incidents resulted from the road transport of dangerous goods. This is a reduction from last years total and comparable with the eleven year average of 19. Ten incidents involved packaged dangerous goods and ten incidents involved transport in bulk containers.

A review of incidents occurring in 1995 indicates that 9 incidents were the direct result of traffic accidents notably from roll-over and collisions. Effectively, 8 of the 20 incidents recorded this year resulted from operator error or breaches of the regulations, 3 incidents resulted from material failure and the remaining incidents are categorised as traffic related.

1995 saw the first full year of operation of the Division's on road enforcement vehicle which gave Divisional Inspectors an enhanced ability to conduct random checks on vehicles transporting dangerous goods. The deficiencies highlighted in the 1994 accident report came under increased scrutiny and it is noticeable that the major cause of accidents last year, the poor stowage and restraint of dangerous goods packages, decreased in prominence.

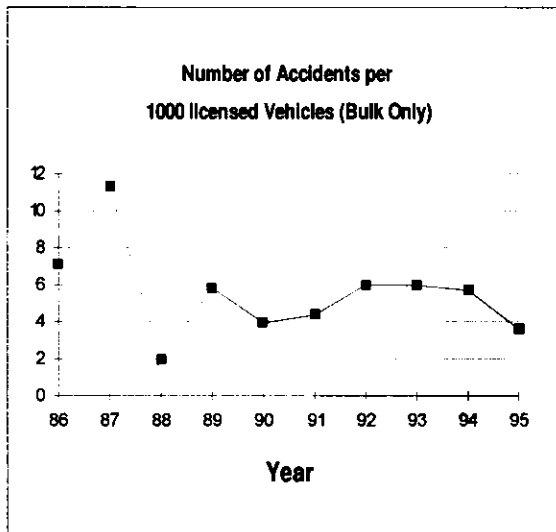
Where operators are identified as consistently non-complying, on road operations will seek to target these operations to ensure that progress is being made towards full compliance.

Nonetheless, stowage and restraint still plague transport operations. While six incidents resulted from poor stowage and restraint, a reduction from eight last year, this remains one of the main causes of incidents. Another major concern was the failure of operators to check receival tanks during transfer operations which resulted in three incidents.

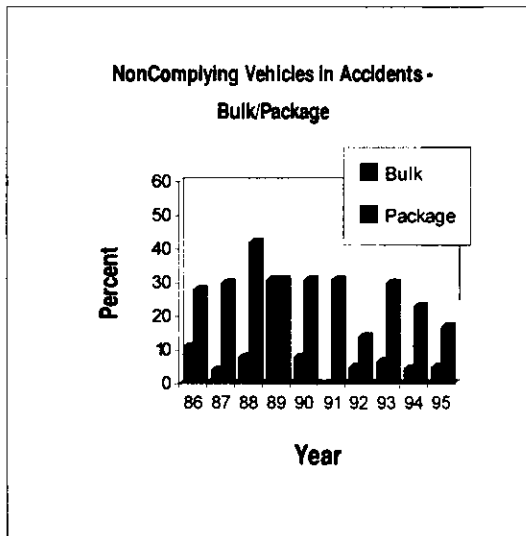
Six incidents occurred during the interstate transport of dangerous goods. Of these, four incidents resulted from poor stowage of dangerous goods, primarily where packages failed from continuous abrasion on the long haul due to inadequate dunnage. The operations of interstate based consignors and prime contractors was reviewed to ensure compliance with the Australian Dangerous Goods Code and subsequent movements were targeted to ensure continuing compliance.

The Explosives and Dangerous Goods Division intends to continue to take a hard line where regulatory breaches are encountered at accidents and prosecutions will usually result unless there are significant mitigating factors.

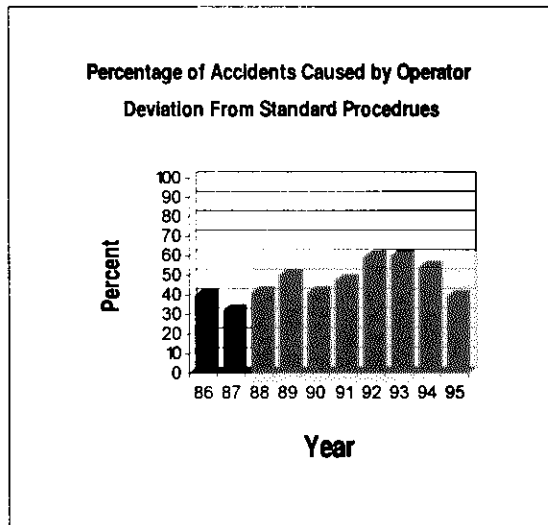
SELECTED ROAD TRANSPORT ACCIDENTS STATISTICS



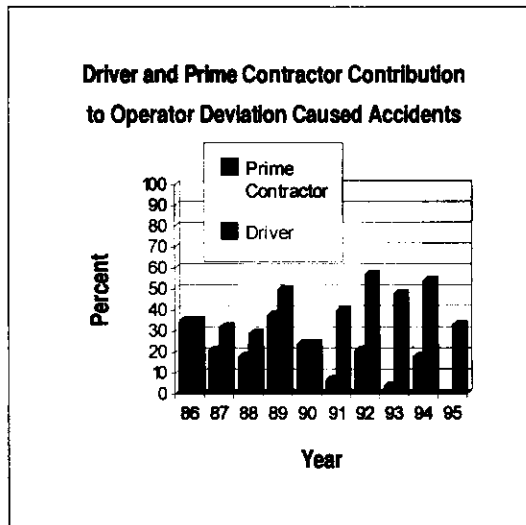
The 1995 value is considerably lower than experienced in previous years due to fewer accidents involving bulk vehicles and an increase in the number licensed vehicles.



The percentage of non-complying packaged and bulk dangerous goods vehicles involved in accidents in 1995 fell well below their respective averages observed over the previous nine year period. Inadequate restraint of packaged dangerous goods was the major contributing factor to these statistics.



The percentage of accidents caused by operator deviation from standard procedures has significantly decreased from previous years. Failure to observe correct procedures during transfer and inadequate restraint were the major causes here.



The reduction in the contribution to accidents from both parties is significant. Improved driver training and progression towards quality endorsement by many companies may have had an effect on these statistics.

DAINGEROUS GOODS TRANSPORT ACCIDENTS SUMMARY REPORT

For the Year 1995

	DATE	LOCATION	GOODS	CLASS	COMMENTS
W1/95	04/01/1995	BROOMEHILL	Liquified Petroleum Gas	2.1	A vehicle transporting cylinders of liquefied petroleum gas rolled over and caught fire when the driver failed to negotiate a bend in the road.
W2/95	05/01/1995	MADDINGTON	Hypochlorite Solutions	8	A 25 litre drum of hypochlorite solution fell from the back of a tray top vehicle and ruptured while the vehicle was negotiating a corner.
W8/95	09/01/1995	KWINANA	Sulphuric Acid	8	Discharge piping on a tanker failed during product transfer resulting in a spill of sulphuric acid.
W4/95	16/01/1995	YELLOWDINE	Petroleum Spirit	3	A 200 litre drum of petroleum spirit leaked after being punctured by a nail in a pallet while being transported from Victoria to Perth.
W5/95	27/01/1995	NORTH PERTH	Nitric/Phosphoric Acid Mix	8	The inadvertent mixing of incompatible corrosive liquids in a storage tank led to the heating, expansion and subsequent failure of the tank shell.
W3/95	27/01/1995	ALBANY	Petrol	3	A four wheel drive vehicle ran into a petrol tanker which was unloading at a service station site. 100 litres of petrol was spilt.
W6/95	24/03/1995	SOUTH GUILDFORD	Sodium Hydroxide	8	A small amount of corrosive liquids leaked from packages on a vehicle when the load shifted as the vehicle negotiated a bend.
W7/95	11/06/1995	COCKLEBIDDY	Petroleum Spirit	3	The rear trailer of a vehicle combination transporting flammable liquids in 200 litre drums rolled over damaging several drums and resulting in the loss of a small amount of product.
W9/95	23/06/1995	COMO	Petrol	3	A petrol tanker ran into the back of another petrol tanker which was stationary at traffic lights. There was no loss of product despite extensive damage to both vehicles.
W10/95	05/07/1995	FORRESTFIELD	Ammonium Nitrate	5.1	The locking mechanisms on two shipping containers containing ammonium nitrate failed during the shunting of rail vehicles, resulting in a spill of product.

DA NGER OUS G OODS T RAN SPORT ACC IDENTS SUM MARY R E P ORT

For the Year 1995

DATE	LOCATION	GOODS	CLASS	COMMENTS
W12/95 25/07/1995	SAWYERS VALLEY	Ethanol	3	A vehicle transporting ethanol in small packages rolled over and struck a power pole in wet weather. No ethanol was spilt.
W14/95 28/07/1995	GERALDTON	Ammonium Nitrate	5.1	A belly dumper on the rear of a road train transporting loose ammonium nitrate rolled over while the driver attempted to negotiate a roundabout at high speed.
W11/95 28/07/1995	PARKESTON	Butanol	3	Incorrect stacking of drums of butanol in a rail wagon allowed a number of the drums to rub against a metal door causing product to leak.
W13/95 18/08/1995	PINJARRA	Sulphuric Acid	8	A spill of sulphuric acid occurred after an operator at a large processing plant failed to ensure that a receival tank was appropriately depressurised prior to product transfer.
W16/95 02/11/1995	FLOREAT PARK	Petrol	3	A small amount of petrol leaked from a receival tank when a tanker driver misread the tank dip stick prior to transfer.
W18/95 03/11/1995	MUNDARING	Hexanes	3	A leaking drum of flammable liquid on a semi trailer was observed by a following motorist who alerted the Police. The Police stopped the vehicle and the leaking drum was isolated.
W15/95 11/11/1995	COOLGARDIE	Ammonium Nitrate Liquid	5.1	A B-double transporting hot ammonium nitrate solution rolled over while travelling from Perth to Kalgoorlie causing a small amount of product to leak from a damaged tank.
W17/95 21/11/1995	HALLS CREEK	Sodium Cyanide	6.1	A semi trailer transporting intermediate bulk containers of sodium cyanide collapsed when the converter dolly was pulled from under it. An emergency response was activated.
W19/95 02/12/1995	NORSEMAN	Resin Solution	3	A number of packages of flammable liquids on a semi trailer leaked when the load shifted in transit.
W20/95 22/12/1995	KALGOORLIE	Ammonium Nitrate Mixture	5.1	A tanker containing an ammonium nitrate mixture separated from a prime mover when the driver failed to check that the turntable was secured prior to moving the vehicle.

DANGEROUS GOODS TRANSPORT ACCIDENTS REPORT

Date : 05 January 1995 **Time** : 1150 hrs

Location : Corner of Albany Highway and Kelvin Road
MADDINGTON

Dangerous Goods Involved : HYPOCHLORITE SOLUTIONS
Class 8

Sub-Risk -

UN No. 1791

Packaging Group : III

Quantity Involved : 25 litres

Quantity Spilled : 25 litres

Scenario :

An unrestrained 25 litre hypochlorite solution drum fell from the back of a tray top vehicle while the vehicle was negotiating a corner at a busy metropolitan intersection.

It was found that at the time of the incident the side of the tray top was not properly secured.

The drum ruptured upon impact and the hypochlorite solution was spilt onto the road. Motorists were directed around the spill until the Fire Brigade attended the scene and diluted the spilt product with water.

DGAT : W2/95

File No. : 5/95

DANGEROUS GOODS TRANSPORT ACCIDENTS REPORT

Date : 16 January 1995 **Time** : 0730 hrs
Location : Great Eastern Highway
 YELLOWDINE
Dangerous Goods Involved : PETROLEUM SPIRIT
 Class 3
 Sub-Risk -
 UN No. 1271
 Packaging Group : II
 Quantity Present : 8160 litres
 Quantity Involved : 30 litres

SCENARIO :

A 200 litre drum of petroleum spirit was punctured by a nail in a pallet while in transit from the manufacturer's premises in Victoria to Perth.

The leak was noticed by the driver at Yellowdine, during a routine check of the packages and the emergency services were contacted.

Police and Fire Brigade personnel from Southern Cross attended the scene and the leaking drum was removed from the vehicle. The remaining liquid in the damaged drum was decanted into a new drum and the damaged drum was disposed of.

DGAT : W4/95

File No. : 17/95

DA NGER OUS GOODS TRANSPORT ACCIDENTS REPORT

Date : 27 January 1995 **Time** : 2100 hrs

Location : Charles Street
NORTH PERTH

Dangerous Goods Involved : NITRIC/PHOSPHORIC ACID MIX

Class 8

Sub-Risk -

UN No. 1760

Packaging Group : II

Quantity Present : 4500 litres

Quantity Involved : 4500 litres

POTASSIUM HYDROXIDE

Class 8

Sub-Risk -

UN No. 1814

Packaging Group : II

Quantity Present : 800 litres

Quantity Involved : 800 litres

Scenario :

A driver responsible for the delivery of a load of corrosive liquids inadvertently transferred four 200 litre drums of potassium hydroxide into a storage tank containing 4500 litres of a mixed acid solution. The mixing of these incompatible liquids created a violent reaction which led to rapid heating within the tank. This heating forced the tank to expand which ultimately caused the tank shell to be punctured by a bracket which was supporting the fill line. The entire contents of the tank then emptied into the surrounding bund.

The Police and Fire Brigade were contacted along with the supplier of the goods. Through consultation with the emergency services personnel, it was decided that the heated product should be allowed to cool over night before transferring it into recovery tanks. Following the clean up operations, it was noticed that the lining of the bund had been damaged by the spilt product so the product supplier arranged for the replacement and upgrading of the bund lining. The following morning the product was transferred from the bund into intermediate bulk containers and taken away for disposal. The Division has ensured that the chemical suppliers have implemented procedures for product transfer which will prevent a recurrence.

DGAT : W5/95

File No. : 47/95

DANGEROUS GOODS TRANSPORT ACCIDENTS REPORT

Date : 27 January 1995 **Time** : 0735 hrs
Location : Corner of Mawson Street and Albany Highway
ALBANY
Dangerous Goods Involved : PETROL
Class 3
Sub-Risk -
UN No. 1203
Packaging Group : II
Quantity Involved : 2300 litres
Quantity Spilled : 100 litres

SCENARIO :

A petrol tanker was struck by a four wheel drive vehicle while transferring petrol at a service station. The vehicle impact damaged fittings on one compartment of the tanker resulting in the loss of approximately 100 litres of petrol.

The driver of the tanker stopped the leak by closing an internal valve and the Fire Brigade was then notified. Upon arrival at the site, the Fire Brigade laid down sand to contain the spill and organised clean-up of the site.

The service station site has since placed additional obstructions around the site to divert traffic away from the filling area.

DGAT : W3/95

File No. : 16/95

DANGEROUS GOODS TRANSPORT ACCIDENTS REPORT

Date : 24 March 1995 **Time** : 1245 hrs

Location : Kalamunda Road
SOUTH GUILDFORD

Dangerous Goods Involved : SODIUM HYDROXIDE
Class 8
Sub-Risk -
UN No. 1824
Packaging Group : II
Quantity Involved : 450 litres
Quantity Spilled : 10 litres

HYDROCHLORIC ACID
Class 8
Sub-Risk -
UN No. 1789
Packaging Group : II
Quantity Present : 175 litres
Quantity Involved : 10 litres

SCENARIO :

A pallet load of 25 litre drums containing sodium hydroxide and hydrochloric acid slid and tilted on a vehicle as the driver of the tray top vehicle negotiated a corner into a transport yard where he was due to pick up additional goods.

The tilting of the packages caused pressure to be placed on the lids of the drums which allowed a small amount of product to leak onto the vehicle tray.

DGAT : W6/95

File No. : 60/95

DA NGER OUS GOODS TRANSPORT ACCIDENTS REPORT

Date : 11 June 1995 **Time** : 1500 hrs

Location : Eyre Highway
 COCKLEBIDDY

Dangerous Goods Involved : PETROLEUM SPIRIT
 Class 3
 Sub-Risk -
 UN No. 1271
 Packaging Group : II
 Quantity Involved : 8000 litres
 Quantity Spilled : 400 litres

SCENARIO :

The rear trailer of a vehicle transporting petroleum spirit in 200 litre drums overturned while travelling from Melbourne to Perth.

The drums were strewn over the road on impact and the overturned trailer blocked off part of the Eyre Highway.

Approximately three of the drums split open on impact with the road surface and leaked a small amount of product. The Police and Fire Brigade attended the site and cordoned off the area due to the presence of flammable vapours.

It took emergency service personnel approximately four and a half hours to clean up the spill and re-open the road to traffic. No-one was injured as a result of the incident and the cause of the roll over remains unknown.

DGAT : W7/95

File No. : 117/95

DANGEROUS GOODS TRANSPORT ACCIDENTS REPORT

Date : 23 June 1995 **Time** : 0835 hrs

Location : Canning Highway
COMO

Dangerous Goods Involved : PETROL
Class 3
Sub-Risk -
UN No. 1203
Packaging Group : II
Quantity Involved : 3000 litres
Quantity Spilled : 0 litres

DIESEL FUEL
Class 3
Sub-Risk -
UN No. 1270
Packaging Group : III
Quantity Present : 3500 litres
Quantity Involved : 0 litres

SCENARIO :

A tanker loaded with petroleum fuel ran into the trailer of another stationary petroleum tanker while travelling on Canning Highway near Canning Bridge.

The force of the impact resulted in the turntable assembly breaking away from the tank.

Emergency services personnel blocked off the Highway for several hours while the Fire Brigade doused the tankers with foam.

Fortunately, there was no loss of product and the damaged tankers were later towed away for repairs.

DGAT : W9/95

File No. : 127/95

DAINGEROUS GOODS TRANSPORT ACCIDENTS REPORT

Date : 05 July 1995 **Time** : 0850 hrs
Location : Rail Marshalling Yard
FORRESTFIELD
Dangerous Goods Involved : AMMONIUM NITRATE
Class 5.1
Sub-Risk -
UN No. 1942
Packaging Group : III
Quantity Involved : 42000 kg
Quantity Spilled : 9500 kg

SCENARIO :

Two shipping containers containing loose ammonium nitrate were loaded on a rail vehicle at a metropolitan marshalling yard, ready for transport to Kalgoorlie. The containers were left overnight prior to transport the following morning.

At some time during the night the rail wagons were shunted and the force of the impact caused the locking mechanisms on the shipping containers to fail. The doors burst open at the bottom allowing product to slowly pour from the containers.

The spill was not noticed until dawn and as the rail wagon had been moved several times during the night, the spill was spread over a large area including at least three different tracks.

A bobcat was used to recover the product and the damaged containers were returned to the consignor's premises.

DGAT : W10/95

File No. : 131/95

DANGEROUS GOODS TRANSPORT ACCIDENTS REPORT

Date : 25 July 1995 **Time** : 0645 hrs
Location : Great Eastern Highway
 SAWYERS VALLEY
Dangerous Goods Involved : ETHANOL
 Class 3
 Sub-Risk -
 UN No. 1170
 Packaging Group : II
 Quantity Involved : 5500 litres
 Quantity Spilled : 0 litres

SCENARIO :

A semi trailer transporting ethanol in small packages rolled over and struck a power pole on Great Eastern Highway in Sawyers Valley.

It is thought that heavy rains and slippery roads contributed to the accident as the vehicle lost traction as it approached a right hand bend in the highway.

Police blocked off the road and redirected traffic for most of the day while the site was cleared. There were no injuries as a result of the accident, however the water and power supplies to the area were cut for several hours.

DGAT : W12/95

File No. : 149/95

DANGEROUS GOODS TRANSPORT ACCIDENTS REPORT

Date : 28 July 1995 **Time** : 0420 hrs

Location : North Coast Highway
GERALDTON

Dangerous Goods Involved : AMMONIUM NITRATE
Class 5.1
Sub-Risk -
UN No. 1942
Packaging Group : III
Quantity Involved : 54000 kg
Quantity Spilled : 29000 kg

SCENARIO :

A road train consisting of two belly dumpers containing loose ammonium nitrate failed to negotiate a roundabout as it entered the City of Geraldton.

Upon entering the roundabout the second trailer of the road train rolled over onto its left hand side and skidded along the road, coming to rest on the kerb.

It is believed that the accident occurred as a result of a combination of excessive speed and the camber of the road. A small amount of ammonium nitrate was spilt when the clean-up crew removed the tarpaulin from the load.

The belly dumper was righted and the spilt ammonium nitrate was transferred back into the trailer. No one was injured as a result of the incident and the recovered material was taken to the supplier's premises for salvage.

DGAT : W14/95

File No. : 154/95

DANGEROUS GOODS TRANSPORT ACCIDENTS REPORT

Date : 28 July 1995 **Time** : 0800 hrs
Location : Rail Yard
 PARKESTON
Dangerous Goods Involved : BUTANOL
 Class 3
 Sub-Risk -
 UN No. 1120
 Packaging Group : II
 Quantity Involved : 16000 litres
 Quantity Spilled : 100 litres

SCENARIO :

A number of drums of butanol being transported from Fremantle to Adelaide developed leaks in transit. The leak was noticed upon arrival at the Parkeston Freight Terminal. The emergency services were called and assisted with the clean-up operations.

Investigation showed that there was no dunnage between the drums and the metal doors of the rail wagon. This allowed the drums to rub against the doors, causing two of the drums to develop leaks.

DGAT : W11/95

File No. : 148/95

DANGEROUS GOODS TRANSPORT ACCIDENTS REPORT

Date : 18 August 1995 **Time** : 1200 hrs
Location : South West Highway
 PINJARRA
Dangerous Goods Involved : SULPHURIC ACID
 Class 8
 Sub-Risk -
 UN No. 1830
 Packaging Group : II
 Quantity Involved : 55000 litres
 Quantity Spilled : 100 litres

SCENARIO :

A spill of sulphuric acid occurred at a major processing plant when an employee failed to ensure that an acid receival tank was appropriately depressurised prior to product transfer.

An acid tanker arrived on site to make a delivery and the operator was requested to depressurise the receiving sulphuric acid storage tank. The tank and associated pipework had recently been commissioned and the operator had not been trained in the new product transfer procedures.

The operator began to depressurise the receival tank in accordance with the previous procedures and then assisted the tanker driver to connect the transfer hose. After the usual waiting time for the tank to depressurise had elapsed the operator gave the tanker driver the 'all clear' to commence product transfer.

A short time later the operator noticed acid leaking from the vent on top of the tanker and called to the tanker driver to close the delivery valve. The tanker driver then diluted the spilt product with water.

Investigation showed that the receival tank had not been fully depressurised prior to the opening of the delivery valves which created back pressure through the supply line causing the spill. The company involved has since installed highly visible pressure gauges and have reviewed the operating procedures to prevent a recurrence.

DGAT : W13/95

File No. : 151/95

DA NGER O U S G O O D S T R A N S P O R T A C C I D E N T S R E P O R T

Date : 03 November 1995 **Time** : 0800 hrs

Location : Great Eastern Highway
MUNDARING

Dangerous Goods Involved : HEXANES
Class 3
Sub-Risk -
UN No. 1208
Packaging Group : II
Quantity Involved : 2400 litres
Quantity Spilled : 0 litres

PETROLEUM SPIRIT
Class 3
Sub-Risk -
UN No. 1271
Packaging Group : II
Quantity Involved : 13600 litres
Quantity Spilled : 200 litres

SCENARIO :

A motorist following a semi trailer loaded with 200 litre drums of flammable liquid noticed liquid dripping from the back of the trailer and alerted police.

Police stopped the vehicle near Mundaring and found that solvent was leaking from one of the drums on board. Fire Brigade personnel attended the scene and while wearing full protective clothing, began to unload the vehicle to isolate the leaking drum. The highway was blocked off to traffic for over three hours and nearby residents were asked to stay indoors while the spill was cleaned up.

Once the leaking drum had been isolated the vehicle was reloaded and allowed to proceed to its destination. Investigation showed that the drum had developed a leak due to rubbing with other drums while in transit.

DGAT : W18/95

File No. : 191/95

DANGEROUS GOODS TRANSPORT ACCIDENTS REPORT

Date : 11 November 1995 **Time** : 2350 hrs

Location : Great Eastern Highway
COOLGARDIE

Dangerous Goods Involved : AMMONIUM NITRATE LIQUID
Class 5.1
Sub-Risk -
UN No. 2426
Packaging Group : II
Quantity Involved : 28000 litres
Quantity Spilled : 100 litres

SCENARIO :

A B-double tanker vehicle transporting hot ammonium nitrate solution rolled over approximately 18 kilometres west of Coolgardie. The front tanker absorbed most of the impact and leaked approximately 100 litres of product. The rear tank only sustained minor damage and there was no loss of product from this tank.

The Police and Fire Brigade attended the scene and the highway was closed for several hours. A crane was used to right the vehicle and the emergency services personnel assisted in the clean-up.

The contents of the front tanker were transferred to an isotainer and delivered to its destination. The rear trailer was also towed to its destination under police escort.

The driver sustained only minor injuries as a result of the accident and the cause of the roll over remains unknown.

DGAT : W15/95

File No. : 181/95

DANGEROUS GOODS TRANSPORT ACCIDENTS REPORT

Date : 21 November 1995 **Time** : 0800 hrs

Location : Palm Springs Mine access road
 HALLS CREEK

Dangerous Goods Involved : SODIUM CYANIDE
 Class 6.1
 Sub-Risk -
 UN No. 1689

 Packaging Group : I

 Quantity Involved : 20000 kg

 Quantity Spilled : 0 kg

SCENARIO :

A trailer transporting sodium cyanide collapsed when the dolly converter pulled away from it.

Police, Fire Brigade and mine site personnel were activated to repair the trailer and recover the dropped container, which was not damaged.

Further investigation showed that the vehicle and driver were not licensed to transport dangerous goods and breaches of the regulations have been directed to the Ministry of Justice for further action.

DGAT : W17/95

File No. : 186/95

DANGEROUS GOODS TRANSPORT ACCIDENTS REPORT

Date : 02 December 1995 **Time** : 0900 hrs

Location : Eyre Highway
NORSEMAN

Dangerous Goods Involved : RESIN SOLUTION

Class 3

Sub-Risk -

UN No. 1866

Packaging Group : II

Quantity Involved : 150 litres

Quantity Spilled : 150 litres

XYLENE

Class 3

Sub-Risk -

UN No. 1307

Packaging Group : II

Quantity Present : 140 litres

Quantity Involved : 140 litres

SCENARIO :

Packages containing flammable liquid shifted in transit while being transported on a tautliner travelling from the Adelaide to Perth.

A number of the packages split open as a result of the load movement, spilling product throughout the vehicle. The driver of the vehicle noticed the leak upon stopping at a roadhouse in Norseman and rang the local Police. The Police and Fire Brigade attended the scene and used sand to prevent product flowing down drains.

Fire Brigade personnel applied foam to the affected area to protect against ignition of the product and isolated the leaking drums. The leaking drums were then decanted into oversized recovery drums and removed from site for salvage.

The contaminated soil was removed and disposed of and the highway reopened to traffic.

DGAT : W19/95

File No. : 199/95

DANGEROUS GOODS TRANSPORT ACCIDENTS REPORT

Date : 22 December 1995 **Time** : 1630 hrs
Location : Throssel Street
 KALGOORLIE
Dangerous Goods Involved : AMMONIUM NITRATE MIXTURE
 Class 5.1
 Sub-Risk -
 UN No. 3139
 Packaging Group : III
 Quantity Involved : 66000 kg
 Quantity Spilled : 0 kg

SCENARIO :

A tanker containing an ammonium nitrate mixture separated from a prime mover when the driver of the prime mover failed to ensure that the locking pin on the turntable was secured after connecting the two vehicles.

The tanker was damaged as a result of the separation, however there was no loss of product. A crane was called in to lift up the damaged tanker so that it could be connected to another prime mover.

The following morning the product within the damaged tanker was transferred into a recovery tanker and transported to its destination.

DGAT : W20/95

File No. : 24/96

APPENDIX 1

ACCIDENT RECORDING POLICY

PURPOSE

To stipulate the criteria upon which incidents involving explosives or dangerous goods reported to the division are to be designated as **Recorded Accidents**.

SCOPE

All incidents involving the transport, storage and handling of explosives and dangerous goods where such transport, storage or handling is within the scope of the Explosives and Dangerous Goods Act 1961.

CRITERIA

Respective Branch Managers shall assess each reported incident to determine whether they are **Recorded Accidents** according to the following criteria.

1. Any incident involving explosives or dangerous goods that impacts on or presents a significant potential to impact on public safety.
2. Any unintentional fire or explosion (including sabotage) involving or impinging on explosives or dangerous goods containers or storage facilities
3. Any uncontrolled release of explosives or dangerous goods:
 - from a bulk container or pipeline;
 - that travels or impacts off the site where storage or handling occurs; or
 - that causes serious injury to any person or substantial damage to property;
4. Any incident where explosives or dangerous goods containers can be shown to have fallen from a vehicle whilst it is in transit.
5. Any incident where a bulk container carrying explosives or dangerous good is subjected to impact; typically through rollover or collision.

Examples of incidents that **are not** intended to be classified as Recorded Accidents are:

- packages falling from a forklift, sustaining damage and minor leakage with no subsequent injury, property damage or off-site effect.
- where small numbers of packages of dangerous goods are found on the roadside (with or without contents) and their origins remain undetermined.
- vehicle traffic accidents where the containers, their fittings and the dangerous goods remain intact and have not been subjected to impact, and where the dangerous goods are inconsequential to the incident.
- an escape of dangerous goods that is expected during normal operations, maintenance or transfers.
- incidents that involve substances not classified as dangerous goods but are captured by WAHMEMS due to uncertainty or misinformation.



K Price
Director
Explosives and Dangerous Goods Division

3 May, 1996