



DEPARTMENT OF
MINERALS AND ENERGY
WESTERN AUSTRALIA

Explosives and Dangerous Goods Act 1961

**SUMMARY OF ACCIDENT
REPORTS
1992**

ISSN 1038-6254

Explosives and Dangerous Goods Division
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SUMMARY OF ACCIDENT REPORTS 1992

SUMMARY OVERVIEW

By monitoring accident trends, the Explosives and Dangerous Goods Division is able to take early action to meet its objective of keeping the public of Western Australia as safe as reasonably practicable from the risks which result from the storage, handling and transport of explosives and dangerous goods.

The dominant single contribution to the accidents in 1992 was "operator error" which is more correctly described as a failure to follow standard procedures.

The Division has recently introduced strategies to deal with this problem:

— the requirements of the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code) now prescribe a higher level of training for drivers of vehicles transporting dangerous goods in bulk; and

— increased emergency response training requirements have been introduced with the proclamation of Dangerous Goods Regulations.

A better understanding of dangerous goods, their properties and their potential to generate hazards should result from the training, and from this should flow a reduction in accidents in this category.

This Summary of Accident Reports was produced using a software program (OSCAR) developed within the Explosives and Dangerous Goods Division.

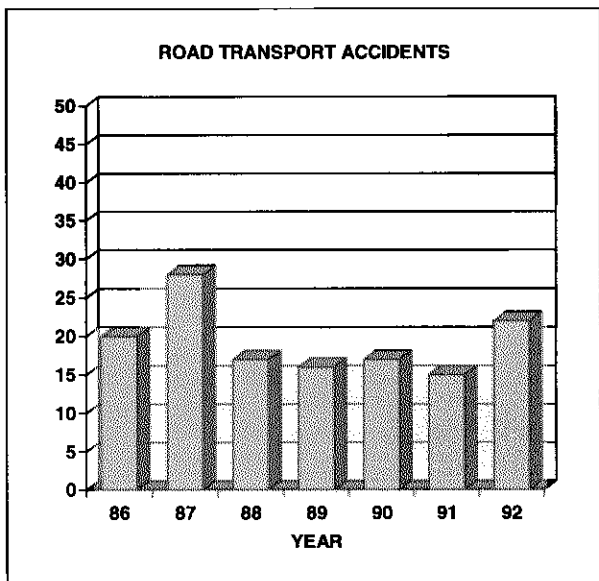
Western Australia continues to be the only Australian state which comprehensively collects and analyses accident data and produces a report of this kind. However, discussions are now underway with the NSW EPA and the Australian Association of Fire Authorities to incorporate the data analysis parts of OSCAR into a national data collection system which, within two years, may enable us to compare Western Australia's performance with the rest of the nation.

More importantly a national data base will result in a much more reliable indicator of trends by which to set future directions.

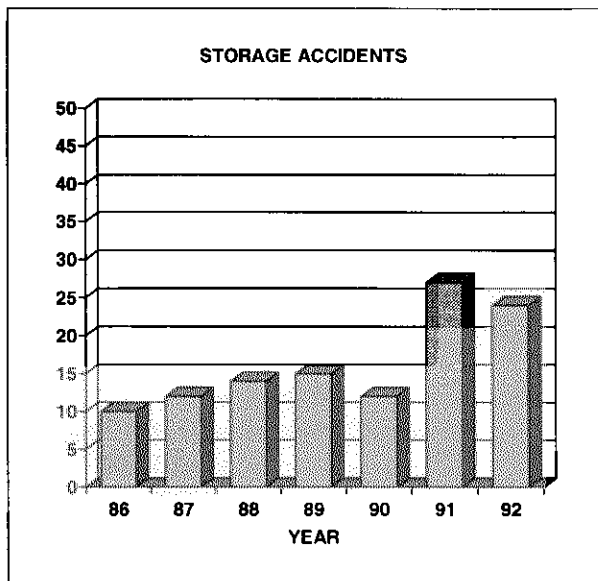


K Price
Chief Inspector
14 April 1993

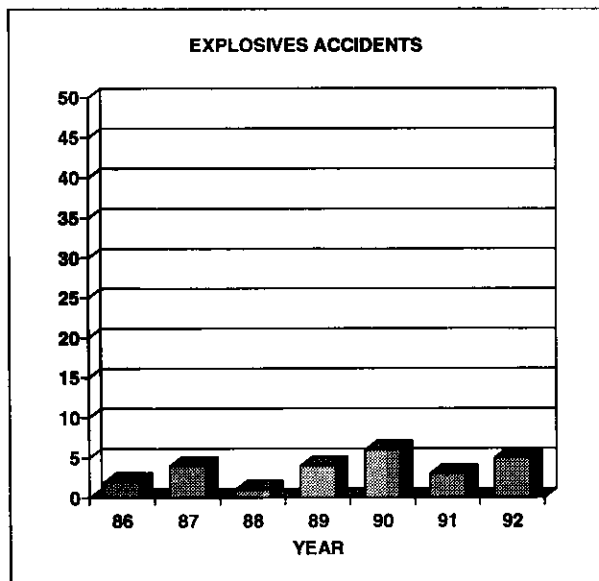
EXPLOSIVES AND DANGEROUS GOODS ACCIDENT STATISTICS



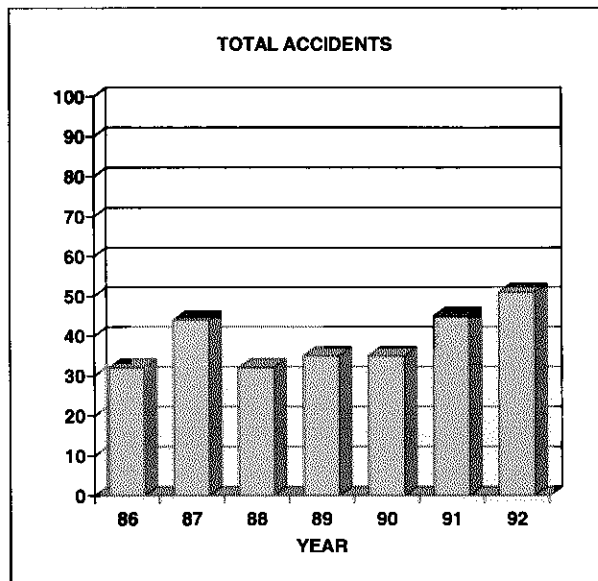
The significant rise in road transport accidents for 1992 was centred around pre and post-Christmas festive seasons.



The slight reduction for 1992 resulted from fewer reported incidents emanating from Major Hazards Sites.

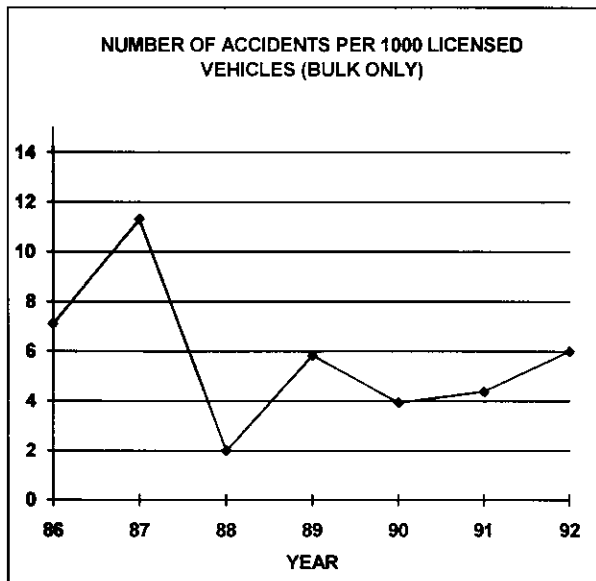


The 1992 explosives accident statistics are dominated by public mis-use rather than specific industrial accidents.

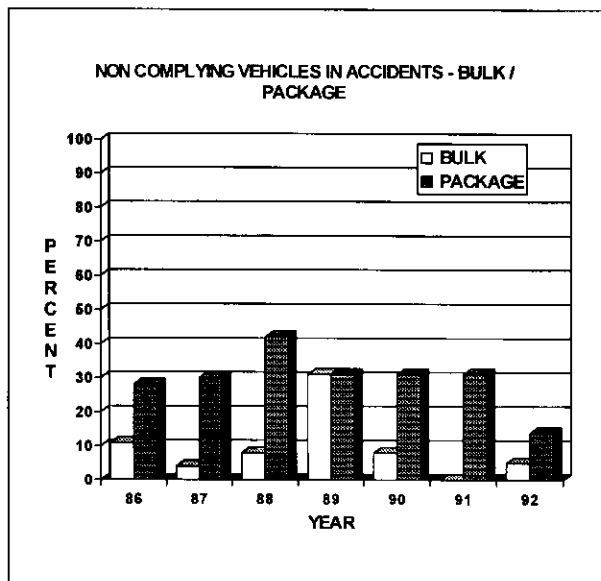


Whilst the apparent rising trend in total accidents is of concern it is less disturbing to note the majority are minor incidents.

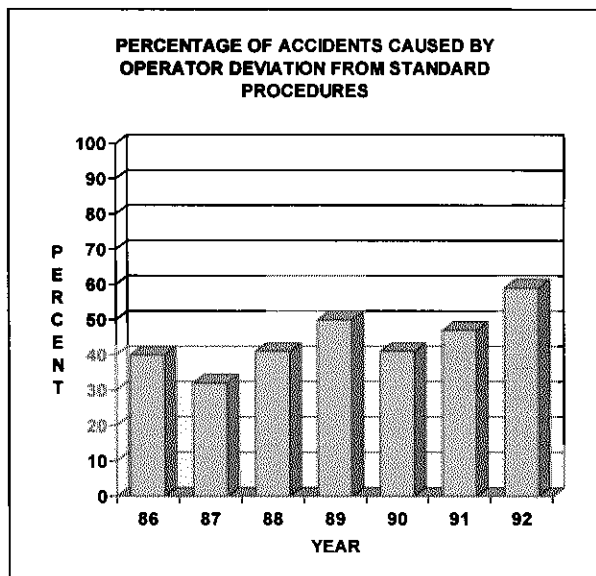
SELECTED ROAD TRANSPORT ACCIDENT STATISTICS



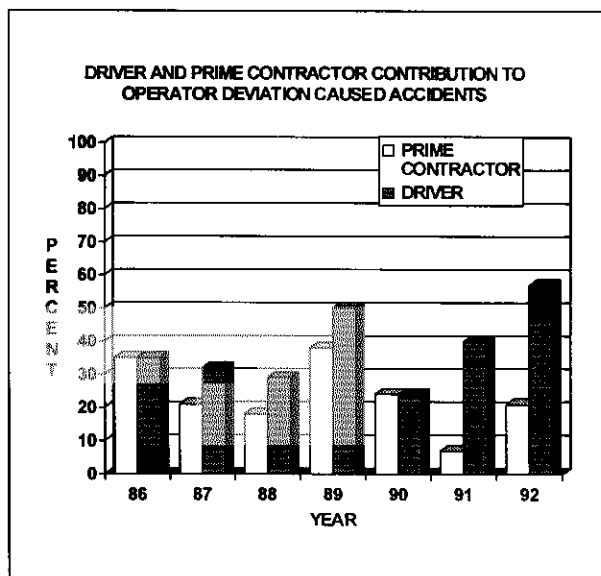
The 1992 value corresponds with the overall average of approximately 6 accidents per 1000 licensed vehicles.



Whilst the percentage of non-complying vehicles involved in accidents declined, the statistics below show a marked increase in incidents caused by deviation from standard operating procedures.



Deviation from the regulations contribute significantly to overall deviation from standard procedures



Prosecution of the "small guy" is often criticised, however the above statistics expose drivers as major contributors to accidents.

EXPLOSIVES ACCIDENTS

INTRODUCTION

Five accidents involving explosives were reported to the Division during 1992, compared with three in 1991.

The most serious accidents involved people fooling with explosives to produce an effect - unfortunately in each case the lasting effects were serious hand injuries.

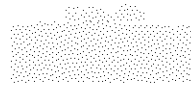
One accident involved a youth under the influence of alcohol experimenting with a suspected detonator.

Another accident resulted when a trackman, trained in the use and dangers of railway track signals, cut open 2 signals and poured the contents into a steel pipe in an attempt to produce a "fizz" effect.

A further accident involved a person wanting to wake his friends early one morning after a party by firing a detonator.

These incidents highlight the importance of shotfirers and others who are in possession of explosives keeping safe custody of them. This will minimise the possibility of explosives falling into the wrong hands such as those of children or people with little or no safety knowledge.

The other 2 accidents related to transport and manufacture. Fortunately, both were not of a serious nature although the latter had the potential to be more disastrous. Remedial action was taken to prevent the incident from recurring.



EXPLOSIVES ACCIDENTS SUMMARY REPORT

FOR THE YEAR 1992

	Date	Location	Goods	Class	Comments
W1/92	17/01/92	Karratha	Suspected Detonator	1.1	A youth lit a device which exploded and severely injured his right hand. The device was suspected to be a detonator.
W2/92	22/05/92	Meekatharra	Low Sensitivity Explosives	1.5	Tank seam failure due to poor road conditions resulted in spillage of bulk emulsion explosive.
W3/92	06/06/92	Via Newman	Low Sensitivity Explosives	1.5	Fire in mono pump whilst used in reverse (not designed for reverse) and valve to air left open - loss of lubrication from product.
W4/92	30/09/92	Dalwallinu	Signal, Railway Track, Explosive	1.4	Railway track signals dismantled by trackman for intended misuse - unexpected detonation caused injuries to 2 people.
W5/92	08/11/92	Merredin	Cord, Detonating, Flexible	1.1	Person foolishly attempting to light end of detonating cord with cigarette lighter suffered hand injuries after detonation.

END OF SUMMARY REPORT

EXPLOSIVES ACCIDENT REPORT

DATE: 17 January 1992 2230 hrs
LOCATION: Radley Drive
KARRATHA
EXPLOSIVES SUSPECTED DETONATOR
INVOLVED: Class 1.1
Compatibility Group B
UN No. 0029
Quantity Present unknown
Quantity Involved 1

SCENARIO

A youth sustained serious injuries when a suspected detonator exploded in his hand.

The youth was attending a small party, together with four mates, all of whom were under the influence of alcohol. During the party he left the house and was later seen near the carport trying unsuccessfully to light a small silver object with an attached fuse. It was suspected to be a rod (a detonator crimped to a length of safety fuse). His mate decided to assist him so he lit the fuse with a cigarette lighter. He handed the rod back to the first youth and they observed it sparkle for a few seconds. The first youth held the rod for a short while before it detonated in his hand. He lost the middle finger from the lower joint on his right hand together with severe lacerations to that hand.

The other youths contacted the emergency services who transferred the youth to Royal Perth Hospital. A search of the premises failed to locate the device, other similar devices or the injured youth's severed finger.

EA : W1/92 FILE No. : 29/92

EXPLOSIVES ACCIDENT REPORT

DATE: 22 May 1992 1600 hrs
LOCATION: Wiluna/Meekatharra Road
MEEKATHARRA
EXPLOSIVES INVOLVED: LOW SENSITIVITY EXPLOSIVES
Class 1.5
Compatibility Group D
UN No. 0332
Quantity Present 6000 kg
Quantity Involved 400 kg

SCENARIO

Spilled product from a 2000 litre emulsion explosives tank was noticed during a routine vehicle check by the driver.

Arrangements were made by the consignor for another tank to be brought on site for the transfer of the remaining product from the damaged tank. All spilt product was recovered and the route travelled by the vehicle was inspected to ensure no product had fallen from the tray of the vehicle.

The cause of this incident was a split seam in the tank resulting from metal fatigue due to poor road conditions. The damaged tank has been taken out of service permanently.

EA : W2/92 FILE No. : 50/92

EXPLOSIVES ACCIDENT REPORT

DATE: 6 June 1992 0730 hrs
LOCATION: Iron Ore Minesite
VIA NEWMAN
EXPLOSIVES INVOLVED: LOW SENSITIVITY EXPLOSIVES
Class 1.5
Compatibility Group D
UN No. 0332
Quantity Present 90000 kg
Quantity Involved 4000 kg

SCENARIO

Smouldering and small flames were noticed from a mono pump on an explosives mixing vehicle while it was being used to load explosives. The vehicle was being used to self load product, with the mono pump in reverse mode as the static ground pump had broken down.

Fire extinguishers were used to extinguish the flames prior to the vehicle being driven away from the loading area to an isolated location. Water was used to cool the mono pump. Explosives already pumped into the vehicle were washed out and destroyed. The cause of this incident is believed to be a valve being left open, allowing the mono pump to draw in air which resulted in it not being lubricated by the product and thereby overheating.

Remedial action was taken to make the pump inoperable in reverse mode and investigations are being conducted to determine if a suitable safety check device is available to be fitted to the pump.

EA : W3/92 FILE No. : 160/92

EXPLOSIVES ACCIDENT REPORT

DATE: 30 September 1992 1540 hrs
LOCATION: Railway Yard
DALWALLINU
EXPLOSIVES INVOLVED: SIGNAL, RAILWAY TRACK, EXPLOSIVE
Class 1.4
Compatibility Group S
UN No. 0193
Quantity Present 2
Quantity Involved 2

SCENARIO

A trackman, trying to obtain a "fizz" effect from railway track signals, cut open 2 of these devices and started pouring the contents into a steel pipe.

He noticed some of the powder falling out of the other end so he decided to crimp the bottom in a vice. While supporting the steel pipe in his left hand and tightening the vice with the other, the vice started to hold the pipe and then there was a loud explosion caused by the detonation of the contents.

He suffered lacerations to his left palm and lost the tip of the left index finger. A fellow employee suffered temporary hearing loss in the incident.

The contents of these signals are very sensitive to shock and friction. A circular has been issued highlighting the need for correct use and storage of these signals.

The matter was referred to DOSHWA for possible prosecution against the trackman.

EA : W4/92 FILE No. : 278/92

EXPLOSIVES ACCIDENT REPORT

DATE: 8 November 1992 0730 hrs
LOCATION: Farmhouse South Booraan Road
MERREDIN
EXPLOSIVES INVOLVED: CORD, DETONATING, FLEXIBLE
Class 1.1
Compatibility Group D
UN No. 0065
Quantity Present 0.02 kg
Quantity Involved 0.02 kg

SCENARIO

A person sustained serious injuries when detonating cord exploded in his hand.

The injured person received a 1 metre length of detonating cord, half of which was shaped in a spherical ball, and a detonator from a friend who found the explosives at a local rubbish tip. The injured person held a party at his home on the day he received the explosives. He had decided to awaken guests who had slept overnight with an explosion early the following morning.

With the ball of detonating cord in his left hand he lit the cord with a cigarette lighter resulting in instantaneous detonation. He was immediately taken to the local hospital and later flown to Perth for further hospital treatment. The injuries resulting from the blast were the loss of his thumb, index, middle and ring fingers, and half the palm of his left hand.

EA : W5/92 FILE No. : 284/92

DANGEROUS GOODS STORAGE ACCIDENTS

INTRODUCTION

Twenty four incidents involving dangerous goods in storage were reported to the Division in 1992, compared to twenty seven incidents in 1991.

There has been a decrease in the number of incidents from chemical plants classified as "Major Hazards Sites" from twelve in 1991 to four in 1992. Half of the remaining 20 incidents involved flammable or combustible liquids.

Regrettably, a man was incinerated when he lost control of his motor car, left the road and plunged into a paint retailer's factory. It appears that the wheel of the car kept spinning and friction caused the tyre to burn and then spread to containers of highly flammable liquids.

In another incident, 893000 litres of phosphoric acid spilled into the tank bund during pump maintenance at a chemical works in Kwinana.

Deviation from standard practices and inadequate procedures combined to account for 50 % of the storage and handling incidents reported in 1992.

DANGEROUS GOODS STORAGE ACCIDENTS SUMMARY REPORT

FOR THE YEAR 1992

	Date	Location	Goods	Class	Comments
W2/92	14/01/92	Trigg	Diesel Fuel	3.3	Incorrect valve positions selected by tanker driver resulted in product overflow into bund during delivery.
W1/92	27/01/92	Kewdale	Flammable Liquid	3.1	Fire occurred outside a warehouse involving incompatible dangerous goods.
W4/92	06/02/92	Mt Magnet	Sodium Hydroxide	8	Minor spillage of caustic soda in transport yard.
W3/92	18/03/92	Osborne Park	Ammonia, Anhydrous Liquefied	2.3	Loss of liquid ammonia from a large refrigeration system caused evacuation of premises and surrounding streets.
W5/92	12/05/92	Osborne Park	Di-Isobutylketone (DIBK)	3.2	Factory workers were affected by vapours from incorrectly discarded waste solvent.
W6/92	27/05/92	Wangara	Sodium Hypochlorite	8	Incorrect labelling caused the accidental mixing of incompatible chemicals.
W7/92	29/05/92	Merredin	Diesel Fuel	3.3	Fuel line split causing the loss of 10,000 litres into gravel. Leaking pipe isolated and replaced.
W21/92	01/06/92	Kwinana	Titanium Tetrachloride	8	An instrument valve was left in an open position due to a misunderstanding of the correct isolation procedure.
W22/92	08/06/92	Kwinana	Titanium Tetrachloride	8	The correct procedure for venting titanium tetrachloride tanks was not followed resulting in a vapour emission.
W8/92	22/06/92	Bunbury	Diesel Fuel	3.3	Inadequate procedure for valve tagging during pipe modification in fuel depot caused spillage on commencement of tanker filling.
W14/92	29/06/92	Maddington	Compressed Oxygen	2.2	Fire involving compressed oxygen and cylinders of nitrous oxide resulted in explosion damaging premises.
W23/92	29/06/92	Kwinana	Titanium Tetrachloride	8	Emission of titanium tetrachloride vapour due to valve failing to seal during maintenance operation.
W9/92	10/07/92	Geraldton	Petrol	3.1	A fire occurred in a bowser at a service station forecourt after a refuelling operation. Electrical fault suspected.
W10/92	18/07/92	Carine	Liquefied Petroleum Gas	2.1	Vandals tampered with the valves of a 190 kg cylinder resulting in the release of 100 kg of flammable gas.
W11/92	12/09/92	West Perth	Diphenyl Methane Di-isocyanate (mdi)	6.1	75 litres of MDI were deliberately spilled by vandals in an office storage area.

**DANGEROUS GOODS STORAGE
ACCIDENTS SUMMARY REPORT
(continued)**

	Date	Location	Goods	Class	Comments
W12/92	14/09/92	Osborne Park	Paints, etc.	3.1	A runaway car hit an automotive paint factory causing a fire, destroying the factory and incinerating the driver.
W13/92	22/09/92	Karratha	Compressed Oxygen	2.2	Unexplained rupture of a compressed gas cylinder. Ruptured cylinder not found. No fire or ignition sources evident.
W24/92	11/10/92	Kwinana	Titanium Tetrachloride	8	Contaminated solids which were dislodged from pipework resulted in an emission of titanium tetrachloride vapour from within the solids.
W17/92	21/10/92	Belmont	Diesel Fuel	3.3	Diesel spill caused by failure of hose clamp. A quantity of diesel entered the Swan River.
W15/92	17/11/92	Meekatharra	Chlorpyrifos	6.1	A drum of pesticide was run over by a vehicle and spilt.
W18/92	25/11/92	Armadale	Diesel Fuel	3.3	Float switch failure on a day tank caused the spillage of approximately 500 litres of diesel.
W16/92	11/12/92	Esperance	Diesel Fuel	3.3	Lack of written procedures for fuel transfer led to the spillage of diesel fuel into the tank bund.
W20/92	18/12/92	Kwinana	Phosphoric Acid	8	Approximately 890 kilolitres was lost from a storage tank into the bunded area - associated pump maintenance.
W19/92	27/12/92	North Fremantle	Petrol	3.1	Overfill and spill during pipeline transfer into an above ground storage tank - operator ignored high level alarm.

END OF SUMMARY REPORT

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 14 January 1992 1030 hrs
LOCATION: Karrinyup Road
TRIGG
DANGEROUS DIESEL FUEL
GOODS Class 3.3
INVOLVED: Sub-Risk 8
UN No. 1270
Packaging Group
Quantity Present 38000 litres
Quantity Involved 1408 litres

SCENARIO

A tank farm consisting of two tanks had a top fill arrangement with a bottom discharge. A tanker driver, who had not previously delivered to this depot, assumed the bottom discharge pipework was the filling pipework and proceeded to set the valves to direct fuel into the empty tank.

Unfortunately the top fill pipework had the valve open to the full tank and closed to the empty tank. When the driver started his discharge he overflowed the diesel into the bund area.

A clean-up was undertaken to the satisfaction of the EPA.

DGAS :W2/92 FILE No. : 39/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 27 January 1992 1330 hrs

LOCATION: Miles Road
KEWDALE

DANGEROUS GOODS INVOLVED: FLAMMABLE LIQUIDS
Class 3.1
Sub-Risk
UN No.
Packaging Group II
Quantity Present 853 litres
Quantity Involved 853 litres

POISONOUS SUBSTANCES
Class 6.1
Sub-Risk
UN No.
Packaging Group II
Quantity Present 575 litres
Quantity Involved 575 litres

OXIDISING AGENTS
Class 5.1
Sub-Risk
UN No.
Packaging Group II
Quantity Present 193 kg
Quantity Involved 193 kg

SCENARIO

Early in December 1991 damaged stock had been removed from within a warehouse for pickup and disposal.

A fire occurred where the goods were being stored outside the warehouse.

Although the cause of the fire has not been determined, it is believed that a reaction occurred between incompatible dangerous goods which were not segregated appropriately.

Had the company concerned made arrangements for the goods to be disposed of immediately, as was intended after their removal from the warehouse, the incident could have been prevented.

DGAS : W1/92 FILE No. : 30/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 6 February 1992 0900 hrs
LOCATION: Criddle Street
MT MAGNET
DANGEROUS GOODS INVOLVED: SODIUM HYDROXIDE
Class 8
Sub-Risk
UN No. 1823
Packaging Group II
Quantity Present 480 kg
Quantity Involved 20 kg

SCENARIO

A consignment of caustic soda packages arrived at a transport yard from Perth en route to a client.

An observant operations clerk at the transport yard noticed a liquid substance dripping from the bottom of a pallet and contacted the local shire seeking assistance in handling the minor spillage.

The volunteer fire brigade attended and neutralised the spilled product.

The goods were subsequently repacked and forwarded to the client.

DGAS : W4/92 FILE No. : 90/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 18 March 1992 0850 hrs
LOCATION: Donovan Street
OSBORNE PARK
DANGEROUS GOODS INVOLVED: AMMONIA, ANHYDROUS LIQUEFIED
Class 2.3
Sub-Risk
UN No. 1005
Packaging Group
Quantity Present 6000 litres
Quantity Involved 750 litres

SCENARIO

Liquid ammonia escaped from a compressor unit of a large refrigeration plant after the head of the compressor failed.

It is believed that liquid ammonia flowed back into the compressor after several power failures had shut down the plant during the night. Upon start up of the compressor, the confinement of the liquid by the compressing action caused the head to fail.

Liquid escaped from the unit and quickly vaporised causing evacuation of the factory and surrounding premises and streets. The emergency continued until the loss of liquid from the unit was reduced and finally contained.

DGAS : W3/92 FILE No. : 79/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 12 May 1992 1830 hrs
LOCATION: Neil Street
OSBORNE PARK
DANGEROUS GOODS INVOLVED: DI-ISOBUTYLKETONE (DIBK)
Class 3.2
Sub-Risk
UN No. 1157
Packaging Group III
Quantity Present 200 litres
Quantity Involved 50 litres

SCENARIO

A drum of waste DIBK recovered previously from a minesite for recycling was observed to have a slow leak.

The owner of the premises decanted some of the solvent to below the level of the leak and disposed of the decanted solvent onto the ground.

Vapours from the discarded DIBK affected workers in an adjacent factory and one was hospitalised and treated for nausea.

Emergency services were activated and after appraising the extent of the spill the contaminated soil was removed for disposal the following day.

DGAS : W5/92 FILE No. : 136/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 27 May 1992 1500 hrs

LOCATION: Prindiville Drive
WANGARA

DANGEROUS GOODS INVOLVED: SODIUM HYPOCHLORITE
Class 8
Sub-Risk
UN No. 1790
Packaging Group III
Quantity Present 200 litres
Quantity Involved 20 litres

SULPHURIC ACID
Class 8
Sub-Risk
UN No. 1830
Packaging Group II
Quantity Present 600 litres
Quantity Involved 600 litres

SCENARIO

Four 200-litre drums of product labelled "Liquid Pool Acid" (34% sulphuric acid) were to be transferred to a 1000-litre IBC (Intermediate Bulk Container) in an open area.

The contents of three of these drums were transferred successfully. However, the fourth drum when transferred caused a reaction which liberated chlorine gas.

It became apparent that the fourth drum was incorrectly labelled as the contents were found to be 12.5% sodium hypochlorite.

Three people (including two people from the adjacent premises) were taken to hospital for observation.

DGAS : W6/92 FILE No. : 151/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 29 May 1992 1300 hrs
LOCATION: Gamenya Avenue
MERREDIN
DANGEROUS DIESEL FUEL
GOODS Class 3.3
INVOLVED: Sub-Risk
UN No. 1270
Packaging Group
Quantity Present 25000 litres
Quantity Involved 10000 litres

SCENARIO

A suspected 10000 litre product loss was discovered from an overhead storage tank (capacity 30000 litres) with feed pipe running below ground for an approximate length of 15-18 metres. The pipe was approximately 1.5 metres below ground.

The below ground pipe corroded causing a leakage into the ground. The dip reading for the tank indicated a problem but through staff error it was not reported for two weeks.

At first it was suspected that fuel had been stolen. However, checks of the ground revealed that it had been saturated with diesel.

The contaminated soil was removed and the corroded pipe was isolated and replaced with a new aboveground pipe run.

DGAS : W7/92 FILE No. : 159/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 1 June 1992 1248 hrs
LOCATION: Titanium Dioxide Plant
KWINANA
DANGEROUS GOODS: TITANIUM TETRACHLORIDE
Class 8
INVOLVED: Sub-Risk
UN No. 1838
Packaging Group II
Quantity Present
Quantity Involved 1 kg

SCENARIO

During a scheduled replacement of a rotometer on a titanium tetrachloride vaporiser, lack of communication between operating and maintenance staff led to the work proceeding without an appropriate permit being issued.

During the maintenance operation there was an emission of titanium tetrachloride as a result of a valve not being fully closed.

The emission was terminated by an operator who closed the valve. Following the incident, plant personnel were retrained in plant isolation and permit to work procedures.

DGAS : W21/92 FILE No. : 26/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 8 June 1992 2301 hrs
LOCATION: Titanium Dioxide Plant
KWINANA
DANGEROUS GOODS INVOLVED: TITANIUM TETRACHLORIDE
Class 8
Sub-Risk
UN No. 1838
Packaging Group II
Quantity Present
Quantity Involved <5 kg

SCENARIO

Two empty titanium tetrachloride tanks were being vented in preparation for a planned maintenance shutdown. The fixed venting was being supplemented by additional temporary venting hoses which were taped to the tank flanges.

During isolation procedures in a related section of the plant, a pressure build up was experienced in the tanks which caused the taped hose connection to part allowing an emission of titanium tetrachloride and nitrogen purge gas. The system was rapidly isolated and the release stopped. The isolation procedure was reviewed to prevent recurrence of this incident.

DGAS : W22/92 FILE No. : 26/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 22 June 1992 0500 hrs
LOCATION: Henry Street
BUNBURY
DANGEROUS GOODS INVOLVED: DIESEL FUEL
Class 3.3
Sub-Risk
UN No. 1270
Packaging Group
Quantity Present 848828 litres
Quantity Involved 1970 litres

SCENARIO

A contractor was engaged to carry out pipe modifications in a fuel depot over the weekend. A section of pipe was removed between a diesel tank and the pumps for modification.

The contractor was unable to complete the work over the weekend and intended to resume work at first light on the Monday morning. He was not aware that road tanker filling in the depot commenced at 0500 hrs.

A driver opened the tank valve to prepare for tanker filling and heard the spillage of product onto the ground. He immediately closed the valve.

The cause of this incident was the lack of a suitable tagging system for the maintenance operation. The depot operator has since implemented a suitable system.

DGAS : W8/92 FILE No. : 166/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 29 June 1992 0100 hrs

LOCATION: Albany Highway
MADDINGTON

**DANGEROUS
GOODS
INVOLVED:** COMPRESSED OXYGEN
Class 2.2
Sub-Risk 5.1
UN No. 1072
Packaging Group
Quantity Present 3200 litres
Quantity Involved 3200 litres

NITROUS OXIDE
Class 2.2
Sub-Risk 5.1
UN No. 2201
Packaging Group
Quantity Present 930 litres
Quantity Involved 930 litres

SCENARIO

A fire and explosion occurred at the premises of a veterinary hospital. Investigations revealed that the seat of the blaze and the explosion was within the main operating theatre of the complex.

Compressed oxygen and refrigerated liquid nitrous oxide were present in the room for medical application.

It was suspected that a low level flame impinged upon the lines leading from the oxygen cylinder to the anaesthetic device. Oxygen was liberated from the cylinder as the control valve was left in the open position. The oxygen fed the fire which involved 2 cylinders of nitrous oxide, one full and one empty.

It was suspected that the full cylinder exploded as a result of the heat impingement and caused severe structural damage to the premises.

DGAS : W14/92 FILE No. : 162/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 29 June 1992 1504 hrs
LOCATION: Titanium Dioxide Plant
KWINANA
DANGEROUS GOODS INVOLVED: TITANIUM TETRACHLORIDE
Class 8
Sub-Risk
UN No. 1838
Packaging Group II
Quantity Present
Quantity Involved 15 kg

SCENARIO

In order to clear a process blockage in a section of the plant normally containing titanium tetrachloride vapour, the section of plant affected was shut down and isolated by valves prior to being placed under vacuum. Other units of the plant continued to operate. Prior to commencing work on the unit, a spade was to be inserted between the valve and the pipe flange to ensure a positive isolation from the operating units. The bolts were loosened and the flange spread so the spade could be inserted, there was no emission at this stage and a reasonable vacuum was being maintained in the section to be isolated. Whilst the spade was being inserted, titanium tetrachloride vapour under pressure began to exit from the valve side of the flange.

The personnel working on the system continued to isolate the valve while the emergency response system was activated which included shutting down of other operating units. Plant personnel with BA and enclosed suits completed the isolation in 13 minutes after the release commenced.

Analysis of the incident indicated a fault with the valve prevented complete isolation, and when a solids build up around the flange was broken by the insertion of the spade, titanium tetrachloride from the still operating units escaped via the incompletely sealed valve.

Review of the isolation procedure, associated safe working practice and the suitability of the valve have been carried out to minimise recurrence.

DGAS : W23/92 FILE No. : 26/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 10 July 1992 1445 hrs
LOCATION: Great Northern Highway
GERALDTON
DANGEROUS GOODS INVOLVED: PETROL
Class 3.1
Sub-Risk
UN No. 1203
Packaging Group II
Quantity Present 13000 litres
Quantity Involved 5 litres

SCENARIO

A vehicle on a service station forecourt had just finished being dispensed with fuel and the nozzle was replaced on the bowser in order to reset it for the next vehicle to refuel.

What was thought to be vapour was noticed near the top of the bowser, and on removing the nozzle it was apparent the bowser was on fire.

All cars were moved from the forecourt and the power was switched off.

The fire burnt the delivery hose and leaking petrol fuelled the fire. Heat from the fire forced off the panels on the bowser and the fire was put out with a fire extinguisher.

The fire brigade arrived shortly after. An electrical fault was suspected to have caused the incident.

DGAS : W9/92 FILE No. : 179/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 18 July 1992 1907 hrs
LOCATION: Beach Road
CARINE
DANGEROUS GOODS INVOLVED: LIQUEFIED PETROLEUM GAS
Class 2.1
Sub-Risk
UN No. 1075
Packaging Group
Quantity Present 360 litres
Quantity Involved 200 litres

SCENARIO

Soon after nightfall unauthorised persons manipulated the release valve of a 190 kg (454 litre water capacity) LP Gas decanting cylinder.

This valve was under a locked dome and the release was achieved with the assistance of implements poked through a vent hole.

The emergency services attended and shut off the flow of gas.

The released gas dispersed over parkland and away from residential areas.

DGAS : W10/92 FILE No. : 186/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 12 September 1992 1000 hrs
LOCATION: Railway Street
WEST PERTH
DANGEROUS GOODS INVOLVED: DIPHENYL METHANE DI-ISOCYANATE (MDI)
Class 6.1
Sub-Risk
UN No. 2489
Packaging Group III
Quantity Present 200 litres
Quantity Involved 75 litres

SCENARIO

Maintenance staff entered a storage yard under a major office/retail/entertainment complex and discovered that vandals had been in the yard and had opened a 200 litre drum of chemical solution and spilled some of the contents.

Police and a waste disposal company were called in. When the waste disposal company arrived they recommended contacting the fire brigade as they did not have the necessary protective equipment to clean up the spill.

Access to the yard was restricted whilst fire brigade personnel recovered the spilled material and completed the clean-up.

Six people who had come in close contact with the spillage were taken to hospital for observation, but were later discharged.

DGAS : W11/92 FILE No. : 222/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 14 September 1992 0500 hrs
LOCATION: Hector Street
OSBORNE PARK
DANGEROUS GOODS: PAINTS AND PAINT RELATED MATERIAL
Class 3.1
INVOLVED: Sub-Risk
UN No. 1263
Packaging Group II
Quantity Present 5000 litres
Quantity Involved 5000 litres

SCENARIO

The driver of a car lost control of his vehicle and left the road, plunging the vehicle down an embankment and into the brick wall and roller door of a paint retailer's factory.

It appears that a wheel of the car kept spinning and friction caused the tyre to burn. The fire spread to containers of paint (flammable liquids) being stored in the factory. The flammable paints were in containers of 4 litres or less.

The entire factory was burnt out. The storage of flammable liquids outside the factory in 60 and 200 litre drums was not affected by the fire.

The driver of the car died and was incinerated.

DGAS : W12/92 FILE No. : 248/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 22 September 1992 1610 hrs
LOCATION: Coolawanyah Drive
KARRATHA
DANGEROUS COMPRESSED OXYGEN
GOODS Class 2.2
INVOLVED: Sub-Risk 5.1
UN No. 1072
Packaging Group
Quantity Present 500 litres
Quantity Involved 150 litres

SCENARIO

"An explosion was heard by persons working on an adjoining site". This message was telephoned to the police as the operator of the premises had secured the site and left about 30 minutes earlier.

On arrival back at the site the operator observed that a cylinder (probably oxygen, 50 litre water capacity) had ruptured, knocked over a number of other cylinders and projected itself approximately 40 metres from its original location.

The valving on two of the cylinders that were knocked over sheared off due to the striking of other cylinders.

These two cylinders propelled themselves out through the only sheeted side of a steel framed and covered awning causing damage to the building.

The fire brigade sprayed water over the area for some time although there was no ignition or signs of any heating.

The ruptured cylinder was missing when the operator returned to the site the next morning and has not been located.

No injuries or other damage was sustained.

DGAS : W13/92 FILE No. : 252/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 11 October 1992 0220 hrs
LOCATION: Titanium Dioxide Plant
KWINANA
DANGEROUS GOODS: TITANIUM TETRACHLORIDE
Class 8
INVOLVED: Sub-Risk
UN No. 1838
Packaging Group II
Quantity Present
Quantity Involved <5 kg

SCENARIO

In order to carry out maintenance on a faulty valve, the titanium tetrachloride production process was shut down and isolated under vacuum. The valve was removed from its position by removing all retaining bolts except one at the top of the valve body and one at the bottom, and then pivoting the valve clear of the pipe flanges on these two bolts. The system held vacuum and was secure until solids located within the pipework fell free shortly after the valve had been cleared of the flanges. The solids contained some titanium tetrachloride which escaped to the atmosphere. The release was stopped by operational personnel in fully encapsulated suits (including BA) and the spillage neutralised.

One of the response personnel was affected during the incident due to contamination of protective equipment and required medical attention.

The isolation and safe working procedure (including decontamination of protective equipment procedure) has been reviewed to minimise the potential for recurrence.

DGAS : W24/92 FILE No. : 26/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 21 October 1992

LOCATION: Wheeler Street
BELMONT

DANGEROUS GOODS INVOLVED: DIESEL FUEL
Class 3.3
Sub-Risk
UN No. 1270
Packaging Group
Quantity Present 1000 litres
Quantity Involved 800 litres

SCENARIO

The hose clamp on an unbunded 1000 litre storage tank failed resulting in the loss of diesel onto the surrounding gravel and eventually into a drain.

The spillage travelled into the Swan River where a clean up operation took place, at considerable cost to the site operator.

The owners have subsequently constructed a bund with sufficient capacity to hold the tank's maximum contents.

DGAS : W17/92 FILE No. : 304/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 17 November 1992 1615 hrs

LOCATION: Minesite
MEEKATHARRA

DANGEROUS GOODS CHLORPYRIFOS
Class 6.1

INVOLVED: Sub-Risk 3
UN No. 3017
Packaging Group II
Quantity Present 10 litres
Quantity Involved 0.5 litres

SCENARIO

This chemical was being used to treat the ground and foundations prior to the location of contractors' buildings onsite.

A vehicle manoeuvring through the worksite ran over the partially empty drum, damaging it and causing the loss of product.

The spilt material, absorbed by the soil was collected and removed to the minesite tip for disposal.

DGAS : W15/92 FILE No. : 283/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 25 November 1992 0330 hrs
LOCATION: Gray Rd
ARMADALE
DANGEROUS DIESEL FUEL
GOODS Class 3.3
INVOLVED: Sub-Risk
UN No. 1270
Packaging Group
Quantity Present 16,000 litres
Quantity Involved 500 litres

SCENARIO

Due to a power failure, an auto generator started a small pump used to pump diesel from an underground tank to the generator tank. Once the tank was full the float switch failed to work and approximately 500 litres of diesel overflowed into the drains.

Police, fire brigade and the water authority were notified and absorbent booms were set up in the neighbouring stream to contain the diesel.

A waste disposal company removed a large quantity of the spillage by vacuum and the contaminated road surface within the nursery where the spillage occurred was removed by an earthmoving contractor.

Following the incident, the float switch was removed and product transfer is now done manually.

DGAS : W18/92 FILE No. : 305/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 11 December 1992 1030 hrs
LOCATION: Fuel Depot
ESPERANCE
DANGEROUS GOODS INVOLVED: DIESEL FUEL
Class 3.3
Sub-Risk
UN No. 1270
Packaging Group
Quantity Present 150000 litres
Quantity Involved 1700 litres

SCENARIO

Fuel was pumped via a pipeline from another fuel terminal approximately 300 metres away.

The transfer of fuel was arranged verbally by the depot manager with the manager of the other terminal. Because of a long standing arrangement with the previous manager of the other terminal, it was expected that 100,000 litres would be delivered and the pump system would shut down.

The new manager of the other terminal was unaware of this verbal arrangement and expected to be notified when to shut down.

The tank was subsequently overfilled and 1700 litres of diesel fuel spilled into the tank bund.

The spillage was cleaned up and new procedures are being drawn up and implemented to prevent a recurrence of this incident.

DGAS : W16/92 FILE No. : 301/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 18 December 1992 0100 hrs
LOCATION: Kwinana Beach Road
KWINANA
DANGEROUS GOODS INVOLVED: PHOSPHORIC ACID
Class 8
Sub-Risk
UN No. 1805
Packaging Group III
Quantity Present 6310000 litres
Quantity Involved 893000 litres

SCENARIO

About 893 kilolitres of 50% phosphoric acid was lost from the phosphoric acid storage tank at a chemical works in Kwinana.

The day prior to the incident, a recirculation pump had been removed for maintenance. This involved isolating the pump from the tank using a diaphragm valve on the pump suction. It appears the valve was closed on a slug of gypsum and appeared to be isolated but over a period of 8 hours the slug of gypsum was dislodged by the head of acid in the tank, allowing phosphoric acid to escape from the tank.

The loss of containment was discovered about 2 hours later. The main tank isolation valve was shut, stopping the flow. The spillage was contained within the tank bund.

Recovery of the acid commenced immediately and was completed 48 hours later. Most of the acid was recovered and some of it was neutralised with lime sand for re-use on site.

DGAS : W20/92 FILE No. : 309/92

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 27 December 1992 2000 hrs
LOCATION: Bracks Street
NORTH FREMANTLE
DANGEROUS GOODS: PETROL
Class 3.1
INVOLVED: Sub-Risk
UN No. 1203
Packaging Group
Quantity Present 2936505 litres
Quantity Involved 9000 litres

SCENARIO

Pipeline transfer of petrol was being received from the Kwinana refinery into a 2900 kilolitre storage facility in a North Fremantle fuel terminal.

Towards the end of the transfer both high level alarms activated and were acknowledged by the operator. The operator believing the tank stop dip had not been reached, even though the alarms activated, continued with receipt of product. A short time later petrol vapours were smelt by the operator and upon confirming that the tank had been overfilled, the operator actioned the emergency procedures stopping the receipt.

The product lost from the tank spilt into the drainage and interceptor system and all but 1,000 litres was recovered and returned to the storage tank.

DGAS : W19/92 FILE No. : 307/92

DANGEROUS GOODS TRANSPORT ACCIDENTS

INTRODUCTION

Twenty seven transport accidents were recorded in 1992. Two of these involved rail transport and an additional three involved substances that are not classified as dangerous goods but were associated with the transport of dangerous goods. In effect there were 22 dangerous goods accidents during 1992 compared with 15 for 1991 and an eight year average of 18.9.

The severity of the accidents was reduced and while one fatality occurred, this resulted from a traffic accident and was not resultant from the dangerous goods transported. Indeed, a further three accidents may be considered as traffic collisions where the dangerous goods were incidental to the accident and no escape of material occurred. These are included in this year's report and will be excluded from subsequent reports.

No accidents involved sodium cyanide, continuing the diminishing trend observed from previous years. Nine accidents involved flammable, petroleum products in liquid and gas phase, an increase from four in 1991 and cause for concern. The most severe of these involved a triple road train of petroleum products in which two of the trailers overturned. It was fortunate that no sources of ignition were present as was the case in the fatal fires that occurred with two road trains in 1991. Batteries and acids also featured prominently in this year's statistics.

Of curious significance is the number of accidents occurring in the first and last months of 1992, six and five respectively and accounting for 41% of the accidents for the year. The silly season may be aptly named for the disproportionate number of accidents occurring over this period.

The Divisional newsletter EXPLOSAY continues to highlight areas of concern, particularly with respect to package restraint. Four accidents occurred as a result of inadequate restraint and these breaches were referred to the Crown Law Department for prosecution when the culprits could be identified and the charges substantiated.

DANGEROUS GOODS TRANSPORT ACCIDENTS SUMMARY REPORT

FOR THE YEAR 1992

	Date	Location	Goods	Class	Comments
W1/92	07/01/92	Lancelin	Diesel	NDG	Diesel fuel was spilt in an isolated area following the roll-over of a vehicle transporting diesel in demountable tanks.
W3/92	19/01/92	Kalgoorlie	Battery Fluid, Acid	8	A freight container in transit from South Australia was found to contain spilt battery acid at Kalgoorlie.
W26/92	23/01/92	Kalgoorlie	Nitric Acid	8	A transfer fitting, incompatible with nitric acid failed, resulting in an acid leak from an isotainer being unloaded.
W2/92	24/01/92	Carnarvon	Chlorine	2.3	A trailer transporting a bulk container of chlorine overturned and lost its load - no product loss.
W4/92	30/07/92	West Perth	Liquefied Petroleum Gas	2.1	A car collided with the rear of a stationary LPG tanker causing only minor damage to the tanker. No spill of product occurred.
W5/92	31/01/92	Balga	Petrol	3	A vehicle failed to give way at an intersection and collided with the side of a fuel tanker. No product was spilt.
W6/92	25/02/92	Albany	Sodium Hypochlorite	8	A container of hypochlorite solution was damaged and leaked as a result of a motor vehicle collision.
W7/92	28/03/92	Coolgardie	Organic Peroxide, Type F, Solid	5.2	A vehicle failed to negotiate a bend in the the road and rolled over resulting in a small spill.
W8/92	20/04/92	Norseman	Triazine Herbicide	6.1	A drum of herbicide was damaged when the load shifted on a vehicle as it negotiated a corner.
W14/92	25/04/92	Menzies	Sodium Hydroxide	8	Packages of sodium hydroxide fell off a moving vehicle resulting in a spillage.
W10/92	30/04/92	Sawyers Valley	Lead Acid Batteries	8	A pallet collapsed onto the rear gate of a vehicle causing it to open and batteries to fall from the vehicle.
W9/92	06/05/92	Norseman	Metham Sodium	6	The lining of a 200 litre drum failed during transit allowing the contents to leak.
W11/92	02/06/92	Boddington	Sodium Hydroxide	8	The rear trailer of a B-Double tanker rolled over causing the spillage of 5000 litres of product.
W13/92	01/07/92	Bindoon	Aviation Fuel	3	200 litres was spilt as a result of a collision between a truck transporting aviation fuel and three other vehicles.

NDG = Not classified as dangerous goods

**DANGEROUS GOODS TRANSPORT
ACCIDENTS SUMMARY REPORT
(continued)**

	Date	Location	Goods	Class	Comments
W12/92	04/07/92	South Lake	Petrol	3	An underground tank overfilled from an unattended delivery vehicle. The spilt petrol entered a shopping centre drainage system.
W15/92	05/07/92	Northam	Petrol	3	An underground tank overfilled allowing petrol to flow into drains towards the Avon River.
W16/92	11/08/92	Kelmscott	Hydrochloric Acid	8	An outlet valve on an IBC was fractured during handling, resulting in the loss of its contents.
W17/92	05/10/92	Jerramungup	Liquefied Petroleum Gas	2.1	A tanker slid off the road during adverse weather and tipped over. No product was lost.
W19/92	28/10/92	Upper Gascoyne	Aviation Fuel	3	A fire on the rear of a tray top vehicle spread to the load and gutted the vehicle. One person was injured.
W21/92	05/11/92	Kalgoorlie	Diesel	NDG	A semi-trailer transporting two demountable diesel tanks rolled over due to a trunnion shaft failure.
W18/92	11/11/92	Coolgardie	Silco seal	3	Incompatible dangerous goods were removed from a vehicle when a drum was observed to be leaking.
W22/92	27/11/92	Minilya	Flammable Adhesive	3	Pallets loaded with drums collapsed onto a side gate of a vehicle, forcing the gate open and allowing drums to fall from the vehicle.
W20/92	03/12/92	Beckenham	Morpholine	3	Part of an unsecured load of dangerous goods fell from a truck as it negotiated a corner.
W25/92	22/12/92	North Fremantle	Fuel Oil	NDG	A laden tanker was packed on unreinforced concrete which subsided, tipping the tanker over and spilling its contents.
W23/92	22/12/92	Guildford	Sulphuric Acid	8	Acid was spilled through an unsecured hatch fitting on a tanker as the vehicle negotiated corners.
W24/92	23/12/92	West Pilbara	Petrol	3	The driver of a triple road train lost concentration resulting in the roll-over of the rear two tankers and product spillage.
W27/92	30/12/92	Hilton	Liquefied Petroleum Gas	2.1	An LPG tanker was damaged when it was struck by a passenger vehicle turning in front of it.

END OF SUMMARY REPORT

NDG = Not classified as dangerous goods

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 7 January 1992 0730 hrs
LOCATION: Wedge Island Track
LANCELIN
DANGEROUS DIESEL
GOODS Class NDG
INVOLVED: Sub-Risk
UN No.
Packaging Group
Quantity Present 6000 litres
Quantity Spilled 800 litres

SCENARIO

A four wheel drive traytop vehicle transporting four demountable tanks rolled over when the sand dune it was travelling on subsided.

The four tanks were fully loaded with diesel fuel which was enroute to an isolated fishing community. No loss of product resulted as a result of the roll-over, however, a small quantity of fuel escaped through the tanks' breather vents as the vehicle was being righted. The vehicle was returned to Perth with the remaining cargo.

The driver was not injured in the incident and clean-up was not necessary due to the small extent of the spill and the sandy environment in which the spill occurred.

DGAT : W1/92 FILE No. : 20/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 19 January 1992 1640 hrs
LOCATION: West Kalgoorlie Marshalling Yard
KALGOORLIE
DANGEROUS BATTERY FLUID, ACID
GOODS Class 8
INVOLVED: Sub-Risk
UN No. 2796
Packaging Group II
Quantity Present 1500 litres
Quantity Spilled 15 litres

SCENARIO

Rail staff noticed liquid seeping from the bottom of a container of one of the rail wagons when it arrived at the West Kalgoorlie rail freight yard. The wagon was marked with a Class 8 label for corrosives. The shipping document indicated that the substance was battery acid.

The Kalgoorlie Fire Brigade were notified and attended the yard and confirmed the leaking fluid to be battery acid. The wagon was then isolated in the yard and the contents unpacked by fire brigade personnel.

The caps on the acid containers were found to be insecurely screwed on, allowing the contents of a number of containers to leak. The acid spillage was neutralised and clean-up was effected.

The leaking containers were then repacked for dispatch.

DGAT : W3/92 FILE No. : 78/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 23 January 1992 1430 hrs
LOCATION: Kalgoorlie Explosives Reserve
KALGOORLIE
DANGEROUS GOODS INVOLVED: NITRIC ACID
Class 8
Sub-Risk
UN No. 2031
Packaging Group II
Quantity Present 20000 litres
Quantity Spilled 200 litres

SCENARIO

A 20000 litre isotainer was observed to be leaking during the transfer of nitric acid at an explosives manufacturing site. The transfer was being effected by air pressure and transfer was stopped when the leak was noticed.

Personnel at the site were moved upwind of the spill whilst it was diluted with water. Hydrated lime was used to neutralise the acid and the residue was absorbed with sand and removed for disposal.

DGAT : W26/92 FILE No. : 33/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 24 January 1992 1350 hrs
LOCATION: North West Coastal Highway
CARNARVON
DANGEROUS GOODS: CHLORINE
Class 2.3
INVOLVED: Sub-Risk 5.1
UN No. 1017
Packaging Group
Quantity Present 900 litres
Quantity Spilled 0 litres

SCENARIO

The rear trailer of a road train overturned when the driver swerved to avoid an emu. The load was dislodged but no loss of contents occurred. The bulk container was recovered and loaded onto a recovery vehicle.

DGAT : W2/92 FILE No. : 31/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 30 January 1992 2030 hrs
LOCATION: Kings Park Road
WEST PERTH
DANGEROUS GOODS INVOLVED: LIQUEFIED PETROLEUM GAS
Class 2.1
Sub-Risk
UN No. 1075
Packaging Group
Quantity Present 25470 litres
Quantity Spilled 0 litres

SCENARIO

A Saab passenger sedan travelling at high speed struck the rear of a stationary LPG tanker. The LPG tanker suffered only minor damage to the bumper and the mounting for a retractable hose reel.

The LPG tanker shell was undamaged and there was no loss of product, however, the collision caused extensive damage to the passenger sedan.

DGAT : W4/92 FILE No. : 43/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 31 January 1992 1245 hrs
LOCATION: Mirrabooka Avenue
BALGA
DANGEROUS GOODS INVOLVED: PETROL
Class 3
Sub-Risk
UN No. 1203
Packaging Group II
Quantity Present 17380 litres
Quantity Spilled 0 litres

SCENARIO

A four wheel drive vehicle failed to give way at an intersection, colliding with a fuel tanker. The vehicle impacted with the dual wheels on the left hand side of the fuel tanker.

The tanker shell was undamaged in the collision and there was no loss of product. No injuries were sustained and only minor damage to both vehicles was reported.

DGAT : W5/92 FILE No. : 65/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 25 February 1992 1110 hrs
LOCATION: South West Coastal Highway
ALBANY
DANGEROUS GOODS INVOLVED: SODIUM HYPOCHLORITE
Class 8
Sub-Risk
UN No. 1791
Packaging Group III
Quantity Present 20 litres
Quantity Spilled 20 litres

SCENARIO

A Mazda wagon collided with a road roller on South West Coastal Highway. A container of hypochlorite solution being transported in the wagon was damaged as a result of the collision and the chemical was spilt.

Police and fire brigade personnel attended and diverted traffic until such time as positive identification of the substance was made. Clean-up was effected by the fire brigade.

DGAT : W6/92 FILE No. : 77/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 28 March 1992 0840 hrs

LOCATION: Esperance-Coolgardie Highway
COOLGARDIE

DANGEROUS GOODS INVOLVED: ORGANIC PEROXIDE, TYPE F, SOLID
Class 5.2
Sub-Risk
UN No. 3110
Packaging Group I
Quantity Present 45 kg
Quantity Spilled 0 kg

RESIN SOLUTION
Class 3
Sub-Risk
UN No. 1866
Packaging Group III
Quantity Present 2050 litres
Quantity Spilled 615 litres

SCENARIO

A vehicle loaded mainly with electrical fittings and polypipe failed to negotiate a left hand bend in the road due to a steering malfunction. The vehicle crossed the road, went over the embankment and rolled onto its right hand side.

Included in the load was an electrical varnish together with its catalyst. The two dangerous goods are incompatible and should not have been transported together. Fortunately, the prime contractor had separated the two chemicals and they did not interact.

The prime contractor claimed to have misunderstood the marking limits and subsequently the vehicle was not marked in accordance with the regulations. Legal action against the prime contractor was considered but because of remedial action taken by the company the prosecution did not proceed.

DGAT : W7/92 FILE No. : 83/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 20 April 1992 0800 hrs

LOCATION: Eyre Highway
NORSEMAN

**DANGEROUS
GOODS
INVOLVED:** TRIAZINE HERBICIDE
Class 6.1
Sub-Risk
UN No. 2998
Packaging Group II
Quantity Present 4480 litres
Quantity Spilled 0.5 litres

PESTICIDES, LIQUID, TOXIC, FLAMMABLE, N.O.S
Class 6.1
Sub-Risk 3
UN No. 2903
Packaging Group II
Quantity Present 240 litres
Quantity Spilled 0 litres

SCENARIO

A vehicle transporting herbicides, agricultural stock feed and a five tonne electrical switchboard was negotiating a turn at an intersection when the load being carried shifted. The switchboard came to rest on three pallets of herbicides. The drums of herbicide were not ruptured as a result of the impact, however, one of the drums later split as the switchboard was being unloaded causing herbicide to be spilt.

The volunteer fire brigade were on stand-by while the cargo was transferred to the vehicle of a local transport contractor. The chassis of both the prime mover and the semi-trailer were found to be twisted as a result of the load shifting. The situation took over eleven hours to rectify.

Investigation revealed the cause of the accident to be incorrect loading.

DGAT : W8/92 FILE No. : 111/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 25 April 1992 1550 hrs
LOCATION: Kalgoorlie-Meekatharra Highway
MENZIES
DANGEROUS GOODS INVOLVED: SODIUM HYDROXIDE
Class 8
Sub-Risk
UN No. 1283
Packaging Group II
Quantity Present 200 kg
Quantity Spilled 75 kg

SCENARIO

Menzies Police received a call from a passing motorist advising that a chemical had been spilt on the road 5km south of Menzies.

The police attended and found that eight 25kg bags of sodium hydroxide had fallen off a vehicle onto the road. All of the packages were damaged, with several losing most of their contents. A total of approximately 75kg had spilled onto the road. Neither the driver nor the vehicle transporting the chemical were at the scene when police arrived and despite investigation, were not identified.

The spilled product was later recovered by the Kalgoorlie Fire Brigade and packed into polyethylene bags. The bags were taken to the Menzies Shire depot and later disposed of by shire workers.

DGAT : W14/92 FILE No. : 193/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 30 April 1992 1900 hrs
LOCATION: Bambrook Road
SAWYERS VALLEY
**DANGEROUS
GOODS** LEAD ACID BATTERIES
Class 8
INVOLVED: Sub-Risk
UN No. 2794
Packaging Group III
Quantity Present 22235 kg
Quantity Spilled 1000 kg

SCENARIO

A vehicle travelling east along Great Eastern Highway stopped at a roadhouse where the driver checked the load. The driver noticed that the back left hand gate was insecure and the back left hand pallet had collapsed towards the rear gate. This had caused the gate tongue to snap, opening a gap large enough for batteries to fall through.

The Northam Police were notified and the Mundaring Shire was contacted to effect the clean-up operation. The load was then made secure and the vehicle continued its journey.

DGAT : W10/92 FILE No. : 147/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 6 May 1992 2000 hrs
LOCATION: Eyre Highway
NORSEMAN
DANGEROUS GOODS: METHAM SODIUM
Class 6
INVOLVED: Sub-Risk
UN No. 2902
Packaging Group III
Quantity Present 1600 litres
Quantity Spilled 40 litres

SCENARIO

A 200 litre drum of metham sodium was found to be leaking when the vehicle transporting it stopped at a roadhouse.

The police and emergency services were contacted and the area surrounding the vehicle and leaking drum was secured. The emergency services experienced a delay in effecting cleanup while they waited for the arrival of protective clothing.

Sand was used to absorb the spill and the contaminated sand was removed for disposal. Six hours after the initial alert the area was reopened for trade.

DGAT : W9/92 FILE No. : 146/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 2 June 1992 0545 hrs
LOCATION: Marradong Road
BODDINGTON
DANGEROUS GOODS INVOLVED: SODIUM HYDROXIDE
Class 8
Sub-Risk
UN No. 1824
Packaging Group II
Quantity Present 23120 litres
Quantity Spilled 5000 litres

SCENARIO

A B-double tanker carrying caustic soda solution was travelling along the Pinjarra-Boddington Road approaching Boddington when the driver veered off slightly onto the thin gravel verge. The driver then felt the vehicle pulling to the left as if the rear trailer was sinking.

The driver tried to correct the vehicle by steering hard to the right but just as he felt that the rear trailer was coming back up, he heard a loud noise. The driver stopped the vehicle and got out to inspect the damage. He noticed that the rear trailer was detached and on its side. He also noticed that caustic soda was leaking out of a damaged seam on the overturned tanker.

The driver sought assistance from a passing motorist and started to contain the leak, using a shovel to form a bund from the clay soil base.

The consignor of the caustic soda promptly despatched recovery personnel to the scene. Approximately 85-90% of the spilled liquid was pumped into a salvage tanker and then taken to a nearby goldmine's residue pond for disposal. The contaminated soil was also removed and taken to the residue pond for disposal. The road and ground around the spillage area were then flushed with copious amounts of water.

Examination of the damaged rear trailer revealed that the turntable had detached from the base of its assembly. No signs of mechanical damage to either parts of the assembly were evident.

DGAT : W11/92 FILE No. : 156/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 1 July 1992 1500 hrs
LOCATION: Great Northern Highway
BINDOON
DANGEROUS GOODS INVOLVED: AVIATION FUEL
Class 3
Sub-Risk
UN No. 1270
Packaging Group II
Quantity Present 4000 litres
Quantity Spilled 200 litres

SCENARIO

A traytop vehicle loaded with both full and empty 200 litre drums of aviation fuel collided with three other vehicles, 20 kilometres north of Bindoon on the Great Northern Highway.

Upon impact, the vehicle rolled losing its load. Two of the drums ruptured spilling product onto the roadway. The police and fire brigade were contacted and requested to attend. Upon arrival the fire brigade covered the spilled product with detergent foam and then with sand. The contaminated sand was then disposed of and the remaining product was transferred to new drums and taken away by the owners.

One person was killed and four were injured in the traffic accident.

DGAT : W13/92 FILE No. : 180/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 4 July 1992 0730 hrs
LOCATION: South Lake Drive
SOUTH LAKE
DANGEROUS GOODS INVOLVED: PETROL
Class 3
Sub-Risk
UN No. 1203
Packaging Group II
Quantity Present 40000 litres
Quantity Spilled 400 litres

SCENARIO

A tanker discharging its contents into an underground fuel tank was left unattended by the driver. The receival tank overfilled and a dip cover came loose under the head of liquid acting on it. Petrol flowed freely onto the concourse while the overflow remained undetected and until the valve was closed by the service station proprietor who first noticed the spill. This action prevented the further loss of 3500 litres of petrol remaining in the tanker compartment.

The spilt petrol flowed into the drainage system of an adjacent shopping centre necessitating closure of the centre and evacuation of some nearby residences. Recovery tankers were utilised to empty the drains of the petrol/water mixture and the recovered water was the decanted back into the drainage system.

The shopping centre commenced trading some eight hours after the spill occurred.

DGAT : W12/92 FILE No. : 174/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 5 July 1992 1420 hrs
LOCATION: Fuel Depot
NORTHAM
DANGEROUS GOODS INVOLVED: PETROL
Class 3
Sub-Risk
UN No. 1203
Packaging Group II
Quantity Present 95000 litres
Quantity Spilled 7500 litres

SCENARIO

A fuel depot employee connected a 66000 litre rail tank car, fully laden with petrol, to two underground storage tanks in order to discharge the contents of the rail tanks.

The discharge procedure was carried out with no person in attendance. One of the tanks was filled at a significantly faster rate than the other and as a result that tank became full. The camlock fitting on the road bridger fill point for that tank was not correctly locked which allowed petrol to escape.

The petrol flowed towards the lowest point of the yard and out onto the roadway. The petrol ran into the stormwater drain in the street and through an open drain towards the Avon River.

A passing motorist noticed the petrol pooling on the roadway and immediately contacted the police while his son notified a depot employee who shut off the discharge valves. The area was cordoned off and the fire brigade were contacted. Sand was used to create bunds around the stormwater drain and across the open drain to prevent loss of product into the Avon River. A number of nearby premises were evacuated and the emergency services personnel were mobilised to secure the area. The majority of the spill was pumped into a recovery vehicle and disposed of. Booms were placed in the river to catch any fuel which seeped out from the drain, and foam was used to cover the spill to minimise petrol vapours. Three days after the initial spill the area was declared safe.

DGAT : W15/92 FILE No. : 195/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 11 August 1992 1130 hrs
LOCATION: Railway Parade
KELMSCOTT
DANGEROUS GOODS INVOLVED: HYDROCHLORIC ACID
Class 8
Sub-Risk
UN No. 1789
Packaging Group II
Quantity Present 3000 litres
Quantity Spilled 1000 litres

SCENARIO

An intermediate bulk container (IBC) was being lifted off a vehicle with the aid of a forklift when the outlet valve caught on the cage of an adjoining IBC causing the valve to fracture and acid to be spilt.

The damaged IBC was removed from the vehicle by emergency services personnel and the spilled acid was washed into a stormwater drain and a sump on the property.

DGAT : W16/92 FILE No. : 211/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 5 October 1992 1500 hrs
LOCATION: Hassell Highway
JERRAMUNGUP
DANGEROUS GOODS: LIQUEFIED PETROLEUM GAS
Class 2.1
INVOLVED: Sub-Risk
UN No. 1075
Packaging Group
Quantity Present 11500 litres
Quantity Spilled 0 litres

SCENARIO

A semi-trailer road tanker was proceeding north on Hassell Highway from Bremmer Bay to Jerramungup. In adverse weather conditions (heavy rain and sleet) a rear wheel of the trailer ran onto the highway shoulder which was wet and slippery. The front of the tanker was dragged into the spoon drain and travelled some 30 metres down the drain in an upright position.

The tanker then hit a drain joining from the left, which caused the tanker to tip onto its side and come to rest. The tank was not ruptured during the incident and no product was lost.

Recovery of the tanker was effected during the night by two 50 tonne cranes and a heavy haulage tow truck. At first light, product was transferred into a second tanker. On completion of the transfer the hoses were disconnected and the damaged tanker towed to Perth.

DGAT : W17/92 FILE No. : 253/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 28 October 1992 1430 hrs
LOCATION: Pingandy - Mount Augustus Road
UPPER GASCOYNE
DANGEROUS GOODS INVOLVED: AVIATION FUEL
Class 3
Sub-Risk
UN No. 1223
Packaging Group III
Quantity Present 2100 litres
Quantity Spilled 2100 litres

SCENARIO

The driver of a truck carrying drums of Jet A-1 aviation fuel stopped the vehicle to check the securing of the load. As he got out of the vehicle he noticed flames coming from the load behind the cab and called to his passenger for assistance.

The driver then proceeded to attempt to save personal belongings that were stowed adjacent to the drums of fuel and received burns to his right hand in the attempt.

The passenger entered the cab of the vehicle and obtained a fire extinguisher, however, the extinguisher failed to operate correctly.

The driver and passenger then fled the scene to a safe vantage point some 400 metres from the burning vehicle and watched as several large explosions sent fireballs into the air. The vehicle burned for approximately three and a half hours.

The men were located the following morning by passing Telecom personnel.

DGAT : W19/92 FILE No. : 287/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 5 November 1992 1030 hrs
LOCATION: Kalgoorlie-Leonora Road
KALGOORLIE
DANGEROUS GOODS INVOLVED: DIESEL
Class NDG
Sub-Risk
UN No.
Packaging Group
Quantity Present 30000 litres
Quantity Spilled 0 litres

SCENARIO

A semi-trailer transporting two demountable tanks containing diesel fuel was travelling north approximately 65 kilometres from Kalgoorlie when a trunnion shaft on the first dog trailer collapsed.

The dolly frame fell onto the tyres which in turn locked on the brakes. This sudden braking caused the second trailer to "jack-knife" sending the vehicle out of control. The weight of the front trailer on the tyres caused them to blow out. The trailer rolled over, skidding for approximately 50 metres before coming to rest on its side in a drain.

The tanker shells were only slightly damaged in the incident and there was no loss of product.

DGAT : W21/92 FILE No. : 296/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 11 November 1992 0900 hrs

LOCATION: Coolgardie-Esperance Highway
COOLGARDIE

DANGEROUS SILCOSEAL

GOODS Class 3

INVOLVED: Sub-Risk

UN No. 1993

Packaging Group III

Quantity Present 800 litres

Quantity Spilled 200 litres

SODIUM NITRATE

Class 5.1

Sub-Risk

UN No. 1498

Packaging Group III

Quantity Present 5000 kg

Quantity Spilled 0 kg

SCENARIO

A road train transporting incompatible dangerous goods on one trailer was stopped by the driver when a drum was observed to be leaking from the vehicle. A drum of silco seal had been punctured by accompanying freight and other drums had been damaged. The dangerous goods were unloaded and transported separately to their respective destinations.

The incident was rendered safe eight hours after first being noticed.

DGAT : W18/92 FILE No. : 282/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 27 November 1992 0730 hrs
LOCATION: North West Coastal Highway
MINILYA
DANGEROUS GOODS INVOLVED: FLAMMABLE ADHESIVE
Class 3
Sub-Risk
UN No. 1133
Packaging Group III
Quantity Present 15000 kg
Quantity Spilled 2700 kg

SCENARIO

A pallet loaded with drums of adhesive collapsed as the vehicle transporting it travelled on a section of rough and winding road. The load shifted towards the left hand gate. The pallets forced the side gate open allowing a number of drums to fall from the vehicle and spill their contents onto the road reserve.

The incident was caused by the use of unstable pallets to support heavy loads. Inspection of the pallets found that they were severely weakened by white ant infestation.

DGAT : W22/92 FILE No. : 297/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 3 December 1992 0900 hrs

LOCATION: Albany Highway
BECKENHAM

DANGEROUS MORPHOLINE
GOODS Class 3

INVOLVED: Sub-Risk 6.1
UN No. 2054
Packaging Group III
Quantity Present 200 litres
Quantity Spilled 0 litres

POISONOUS LIQUIDS N.O.S.
Class 6.1
Sub-Risk
UN No. 2810
Packaging Group III
Quantity Present 800 litres
Quantity Spilled 100 litres

SULFAMIC ACID
Class 8
Sub-Risk
UN No. 2967
Packaging Group III
Quantity Present 900 litres
Quantity Spilled 0 litres

SCENARIO

A truck carrying a mixture of packaged dangerous goods was negotiating a right hand turn when a number of the drums fell from the rear of the vehicle. Several of these drums ruptured spilling chemical onto the roadway.

Three police officers at the scene of the incident were taken to hospital for treatment after they were affected by chemical vapours.

A quantity of chemical entered stormwater drains which were later pumped out by salvage vehicles. Absorbent material was spread over the spillage and clean-up was effected.

The road was re-opened some seven hours after the spill.

DGAT : W20/92 FILE No. : 288/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 22 December 1992 1610 hrs
LOCATION: Bracks Street
NORTH FREMANTLE
DANGEROUS GOODS INVOLVED: FUEL OIL
Class NDG
Sub-Risk
UN No.
Packaging Group
Quantity Present 32000 litres
Quantity Spilled 16800 litres

SCENARIO

A fully laden tanker trailer was parked on an area of unreinforced concrete so as to exchange prime movers. During this transition, the weight of the trailer caused the concrete to fail and the ground to subside. The trailer rolled over damaging a fitting on a manhole cover which caused product to be spilt.

The majority of the spilled product was contained and several thousand litres were recovered. The remaining product was absorbed with sand and taken away for disposal.

DGAT : W25/92 FILE No. : 306/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 22 December 1992 1800 hrs
LOCATION: West Swan Road
GUILDFORD
DANGEROUS GOODS INVOLVED: SULPHURIC ACID
Class 8
Sub-Risk
UN No. 1830
Packaging Group II
Quantity Present 13580 litres
Quantity Spilled 60 litres

SCENARIO

A fully laden tanker containing sulphuric acid lost product through an unsecured hatch fitting as the vehicle negotiated corners in Guildford and Millendon.

The majority of the leaked acid was retained within the coaming of the tanker, but drained onto the road through drainage hoses.

Two sections of road were closed and a hotel was evacuated while the acid was neutralised with lime. The tanker was allowed to proceed to its destination after the hatch fittings were made secure.

DGAT : W23/92 FILE No. : 302/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 23 December 1992 0100 hrs

LOCATION: Great Northern Highway
WEST PILBARA

DANGEROUS GOODS INVOLVED: PETROL
Class 3
Sub-Risk
UN No. 1203
Packaging Group II
Quantity Present 35000 litres
Quantity Spilled 14810 litres

AVIATION FUEL
Class 3
Sub-Risk
UN No. 1223
Packaging Group III
Quantity Present 12200 litres
Quantity Spilled 1550 litres

DIESEL
Class 3
Sub-Risk
UN No. 1270
Packaging Group III
Quantity Present 7000 litres
Quantity Spilled 0 litres

SCENARIO

The driver of a triple road train carrying aviation fuel, petrol and diesel lost concentration while travelling south on the Great Northern Highway.

During this lapse in concentration the vehicle veered to the right hand side of the road. When the driver became aware of the situation he then attempted to correct the vehicle by turning sharply to the left. This movement caused the second and third trailers to swing over an embankment allowing the first dolly to overturn and detach.

The impact caused two of the tanker shells to rupture spilling aviation fuel and petrol onto the road reserve. Emergency services attended and supervised clean-up operations.

DGAT : W24/92 FILE No. : 303/92

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 30 December 1992 1730 hrs

LOCATION: South Street
HILTON

**DANGEROUS
GOODS** LIQUEFIED PETROLEUM GAS
Class 2.1

INVOLVED: Sub-Risk
UN No. 1075
Packaging Group
Quantity Present 7800 litres
Quantity Spilled 0 litres

SCENARIO

An LPG tanker was struck by a passenger vehicle which turned in front of the tanker. The gas vessel was not damaged and there was no loss of product.

DGAT : W27/92 FILE No. : 310/92