

EXPLOSIVES AND DANGEROUS GOODS DIVISION

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EXPLOSIVES AND DANGEROUS GOODS ACT 1961-1986

SUMMARY OF ACCIDENT REPORTS 1987

EXPLOSIVES

FLAMMABLE LIQUIDS

DANGEROUS GOODS



DEPARTMENT OF MINES WESTERN AUSTRALIA

ACCIDENT REPORTS - 1987

EXPLOSIVES AND DANGEROUS GOODS ACT 1961-1986

The Division became aware of a total of 57 accidents during 1987, 39 of which involved dangerous goods in transport.

The overturn of a semi-trailer carrying 46000 litres of petrol while negotiating a right hand turn caused extreme concern in the industry. The accident resulted in a comprehensive review of skid plate designs and construction for dangerous goods vehicles to prevent future failures. Moves are also being made through the Standards Association of Australia to prepare an Australian Standard for skid plate design.

Inspectors investigated two accidents where large tanks had exploded during maintenance which involved hot work. The Division has significant expertise in this area and is working with the Department of Occupational Health Safety and Welfare whose responsibility lies with work practices, to improve public safety at locations where hot work is carried out.

The high proportion of vehicle overturns involving the rear trailer of a combination vehicle (60% of vehicle overturns) has resulted in the Division now requiring dollies to be subjected to a Police inspection and be licensed under the Dangerous Goods Regulations before they will be approved for use with trailers carrying dangerous goods. Because of the very low amount of work required to inspect such vehicles by Dangerous Goods Inspectors, no licence fee will apply to dollies.

The increased awareness of the need to report accidents and the increasing familiarity of people with the State Road Transport Emergency Assistance Scheme has resulted in more accidents being brought to the attention of the Division.

Moves are also being made at the Federal level to collect comprehensive accident data and in the near future it is felt that meaningful conclusions may be drawn from accident statistics on a national basis. This should avoid the possibility of knee jerk reactions which can occur following highly publicised but extremely rare events.



H Douglas
DIRECTOR

2 March 1988

EXPLOSIVES ACCIDENTS

Introduction

Only four explosives accidents came to the attention of the Division during the year and one of those was caused by a wilful disregard of safe working procedures.

The incident at a seismic training exercise was most unusual. A video tape of an explosion set up by an Inspector investigating the accident in an attempt to reproduce the circumstances clearly showed a secondary eruption from the blast hole a short time after debris had been projected from the detonation of the seismic charge.

Witnesses at the accident scene reported a similar eruption several seconds after the seismic explosives were detonated and it is believed that the secondary explosion was the venting of steam generated by the seismic charge. There had been no previous secondary explosions and the investigating officer concluded that all reasonable safety precautions had been taken at the site.

EXPLOSIVES ACCIDENTS - SUMMARY

27 April

A 17 year old youth from Norseman was seriously injured by the premature detonation of a home made bomb at the town's disused dam. He sustained injuries to his eye, a fractured leg and a severed femoral artery which led to a considerable loss of blood.

The youth had constructed a device made of detonators contained within a metal pipe and was fitting a projectile to the pipe when the fuse he had lit fired the detonators. The explosion subsequently burst the pipe and the flying metal fragments caused his injuries.

The detonators and fuse were stolen from an unlocked shed.

18 July

A 22 year old geology student was injured during a course of seismic explosions carried out as part of his study. The student approached the fired hole soon after detonation and sustained a broken neck and severe head and chest injuries when the hole further erupted.

14 August

A small fire at a Kalgoorlie explosives factory caused minor damage to the piping at the plant. The fire originated from a pipe containing hot oil used in the manufacturing process. It was later established on examination of the pipe work that ammonium nitrate had been washed down from the decking above and had permeated the insulation to the pipe.

The presence of the ammonium nitrate assisted in the corrosion of the pipe and the subsequent leak of hot oil reacted with the crystallised ammonium nitrate to cause the fire. The cause of the problem was alleviated by relocating the pipe work.

21 December

A mine employee received a superficial abrasion coincident with the explosion of a Nonel detonator in the vicinity of his knee. Investigation is continuing into the cause of the detonation.

GENERAL DANGEROUS GOODS STORAGE ACCIDENTS

Introduction

The Division has become increasingly involved in dangerous goods storage despite the absence of any regulations applicable to dangerous goods other than flammable liquids.

Ammonium nitrate has been the cause of major concern to the Division for several years and there are now several large storage facilities apart from the more traditional stores on mine sites. Recommendations have been made (based on guidelines accepted by the EEC) to maximise safety at these warehouses but in some cases these recommendations are not being followed by the managing companies.

The temporary storage of dangerous goods at transport yards is also the cause for some concern. The fire of 6 February didn't start among the dangerous goods and the major source of fuel was also not dangerous goods. However, the lack of a planned storage facility for chemicals resulted in their ultimate involvement in the fire with environmental consequences which could have been avoided if properly designed, isolated areas had been used for their interim storage.

DANGEROUS GOODS STORAGE ACCIDENTS - SUMMARY

- 4 February Fire broke out in a storage shed at a Pinjarra factory used as a support facility for two explosives manufacturing vehicles. It spread to storages of 25 tonnes of ammonium nitrate and 30 tonnes of hexamine within the building. The fire was brought under control by Fire Brigade personnel after burning for two hours.
- Pollution to the environment was minimised by containing the fire water within sand walls.
- Concern was expressed that a quantity of detonators illegally stored within the building might detonate and increase the extent of the damage but these were subsequently recovered intact.
- 6 February A Welshpool transport company warehouse was engulfed by fire, the fire was being fuelled by the large amount of vegetable oil being stored at the time. The fire eventually spread to an adjoining building, being used as a chemical warehouse.
- The chemical store contained a wide range of chemicals including flammable solvents, corrosives, aerosols, poisons and chlorine.
- The fire caused many drums of chemicals to explode. Those containing flammable material intensified the fire while other products combined with the cooling water to form a solution of unknown composition and toxicity.
- Bund walls were constructed to prevent the water from entering the storm water system once it was found that marine life at a river drain exit was being affected. The problem was found to be the formation of an oxygen depletion film which prevented the marine life from breathing.
- The cooling water was ordered to be removed via waste liquid contractors to a dumping zone approved for toxic material.
- 11 February Occupants of a Kalgoorlie recreation centre were evacuated when noxious gases were released from the inadvertent mixing of hydrochloric acid with a sodium hypochlorite solution maintained in the centre's chlorinating tank and used to purify the water from the indoor swimming pool.
- Inhalation of the gases resulted in the hospitalisation of four people who were released from observation the next day. Fire Brigade personnel used their smoke extractor to rid the centre of the remaining fumes.

- 28 May An ISO tanker was thought to be damaged and leaking when an unidentifiable liquid was observed to originate from the tank at a Fremantle container yard. Fire Brigade personnel washed the spillage away and no further leakage was observed. It was later confirmed that the spillage was hydraulic oil originating from the container lifting equipment.
- 15 July A Bunbury woman suffered frostbite to both hands while refuelling a motor vehicle with LP Gas from a dispenser at the town's gas depot. The injuries were caused by gas escaping from the nozzle before connection was made to the vehicle's fuel tank.
- 3 August Welding performed on a flammable liquid storage tank, while not in a gas free condition, resulted in a vapour explosion which destroyed the tank and extensively damaged a Jandakot workshop. No serious injuries were sustained from the accident which was attributed to poor working practices.
- 24 August An Osborne Park paint warehouse containing large amounts of paints and painting accessories caught fire and was extensively damaged. All drains surrounding the site were continually monitored for vapour levels arising from the unburnt solvents being washed into the drainage system. These levels were found to be lower than that at which an explosion is possible.
- On inspecting the gutted remains the licensed flammable liquids store inside the building, which was designed to Mines Department specifications, withstood the fire leaving the large containers of solvents inside untouched.
- 15 September A bottle of phosphorus was found on the Nedlands foreshore. The bottle was removed for later disposal.
- 1 October A Perth woman was refuelling her vehicle with LP Gas at a Malaga self service station when a gas leak occurred, causing frostbite to the back of both hands and extending to the elbows.
- The gas escaped when the woman was attaching the pump nozzle to the filling point of the vehicle's fuel tank.
- Investigations revealed that the leakage was probably due to the presence of a foreign object, possibly sand, in the dispenser nozzle or the inlet valve of the vehicle's fuel tank which was subsequently dislodged when the gas leak occurred.

- 3 October A fire at the premises of an equipment hire service in White Gum Valley caused damage to a chemical storage shed. The store held 50 litres of glyphosate at the time of the fire and this contributed to the blaze.
- 21 November Oxy welding repairs were being carried out to the inlet pipe of a vacuum tanker used to carry waste products when an explosion occurred. The tank had previously been used to carry a mixture of flammable liquids of low flash point, though subsequent to that load it had been used to carry several loads of aqueous and oily wastes.
- The accident caused both hatches of the tank (approximately 300 - 400mm diameter) to be blown off and the welder fell off the scaffolding where he was working. He was hospitalised with minor physical injuries caused by his fall and was released after 24 hours observation. Minor damage was also caused to the Malaga workshop but no fire resulted.
- 9 December At a small capacity chemical repacking factory in Cannington a batch of calcium hypochlorite was being prepared with accelerator additive. During the mixing in the closed hopper a rapid chemical reaction started which lifted the vessel's lid and produced chlorine gas. The factory was evacuated and the emergency services called.
- Fire Brigade officers wearing full breathing apparatus and using a large amount of water were able to decompose the remaining swimming pool chemical and render the area safe.
- Cause of the incident was traced to the leakage of lubricating oil from a machinery bearing and the immediate reaction of oxidising agent with a fuel chemical.

DANGEROUS GOODS TRANSPORT ACCIDENTS

Introduction

Dangerous goods transport accidents continued to dominate the total accident scene in Western Australia. The following reports are in two groups: 31 for which a comprehensive summary has been prepared and a general group of 8 accidents (including three associated with rail movements) which involved chemicals which were not dangerous goods or which occurred in transport yards.

All 39 accidents have been included in the statistical summary.

Reports on a few incidents involving chemicals other than dangerous goods have been included because the Division was actively involved in advising on how to deal with problems at the accident scene. In the initial stages of such an accident it is often difficult to be sure what level of hazard is presented by the chemicals.

Insecure packages remain the largest single category of accidents and when this factor is considered in conjunction with other dangerous goods accidents involving packages (particularly improper handling) and the potential for fire at transport yards, the Division's high level of activity in this area is justifiable.

For the first time this year a separate section has been included for incidents involving rail transport.

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 2 February 1987 0815 hours

LOCATION: Mills Road
Martin

DANGEROUS GOODS INVOLVED: Solvent 43
Class 3.1 Flammable Liquid
UN No. 1271
Packaging Group II
Hazchem 3[Y]E Pollutant

SCENARIO

A Ford tanker wagon crashed into a steep, heavily wooded gully as a result of brake failure whilst descending Mills Road.

The driver jumped clear from the vehicle just prior to it leaving the road.

There were two bulk tanks carried on the vehicle, the larger being a 3 compartment tank of 8 200 L capacity of which the two front compartments contained the solvent 43 amounting to 5 120 litres.

Flash point of the product was advised as -5°C . Recovery of the product was undertaken by portable diesel powered pump from the No. 1 Compartment. When attempts were made to recover the remaining product from Compartment No. 2, it was discovered that all of the contents had leaked from a tear at the bottom of the tank. Most of the spilled product had evaporated. Approximately half of the total load of solvent was lost.

The driver, consignor and prime contractor were subsequently all prosecuted for breaches of the Dangerous Goods (Road Transport) Regulations.

The Environmental Protection Authority monitored the area for some time to check for pollution effects from the spilled products.

JH

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 26 March 1987 1200 hours
LOCATION: Barradale 330km south of Karratha on
North West Coastal Highway
DANGEROUS GOODS INVOLVED: Jet A1 Aviation Fuel
Class 3.2 Flammable Liquid
UN No. 1270
Packaging Group II
Hazchem 3[Y]E Pollutant

SCENARIO

Two road trains collided head on killing the driver of the fuel vehicle. As the vehicle had previously discharged its load, only a small quantity of fuel residues escaped from the damaged vehicle.

The demountable tanks were lifted without incident for return to Port Hedland.

RL

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 7 April 1987 0800 hours

LOCATION: Old Coast Road, Myalup
55 km south of Mandurah

DANGEROUS GOODS INVOLVED: Metham Sodium 5l
Class 6.1 (liquid soil fumigant)
UN No. 2902
Packaging Group III
Hazchem 2XE

SCENARIO

Traffic on the Old Coast Road was delayed for four hours while emergency services disposed of a leaking 200 L drum of Metham Sodium 5l Liquid Soil Fumigant which had fallen off a vehicle prior to 8.00am.

Four people were admitted to hospital for observation after inhaling vapours from the chemical and all were subsequently released.

The contaminated earth and drum were subsequently removed for disposal.

Fire Brigade, Police and Shire personnel all attended.

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 16 April 1987 1315 hours
LOCATION: Cnr Marangaroo Drive & Girrawheen
Avenue, Girrawheen
DANGEROUS GOODS INVOLVED: Hydrochloric Acid
Class 8 Corrosive
UN No. 1789
Packaging Group II
Hazchem 2R

SCENARIO

Five 25L containers of hydrochloric acid were located, having fallen off a vehicle. Approximately 5L of acid was spilt and Fire Brigade personnel in attendance hosed the acid into an adjacent drain.

RL

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 28 April 1987 1820 hours

LOCATION: Garrett Road Bridge
Bayswater

DANGEROUS GOODS INVOLVED: Sprayseed
Class 6.1 Poison
UN No. 3016
Packaging Group I
Hazchem 3WE

SCENARIO

A 20L drum of Sprayseed was found lying on the road verge by a resident. The drum was largely intact and about 50ml of the chemical had leaked from a small crack in the drum.

The chemical was presumed to have fallen off the back of a vehicle and was removed for disposal by Health Department officials. The spillage was cleaned up by Fire Brigade personnel.

RL

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 29 April 1987 0935 hours
LOCATION: Brand Highway/Northwest Coast Highway
Interchange Roundabout, Geraldton
DANGEROUS GOODS INVOLVED: Diesel Fuel
Class 3.3 Flammable Liquid
exempt for the purpose of Road
Transport [Reg. 104(b)]

SCENARIO

On Wednesday 29 April the rear trailer of a road train overturned while negotiating the Geraldton roundabout.

Three 8000 L demountable tanks mounted on the trailer were ruptured and severely damaged releasing 20850 litres of diesel fuel into the system of storm water drains. This spillage was contained in a sump and subsequently pumped out by a salvage tanker. Contaminated sand to a depth of one metre was removed for disposal.

The cause of the accident was not determined.

RL

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 2 May 1987 1100 hours
LOCATION: Cnr McGovern Way & Ashley Street,
Derby
DANGEROUS GOODS INVOLVED: Sodium Hydroxide
Class 8 Corrosive
UN No. 1823
Packaging Group II
Hazchem 2R

SCENARIO

A 20kg package of sodium hydroxide fell off a utility while it was rounding a corner. Half the contents spilt and Fire Brigade personnel attended to wash away the spillage.

RL

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 29 May 1987 0845 hours
LOCATION: Stoneham Street, Belmont
DANGEROUS GOODS INVOLVED: Hydrochloric Acid
Class 8 Corrosive
UN No. 1789
Packaging Group II
Hazchem 2R

SCENARIO

While negotiating a bend in the road, five 200L drums of hydrochloric acid fell off the vehicle when the driver swerved to avoid a motorist cutting in front of him. One of the drums burst and the acid was spilt.

Police and Fire Brigade personnel attended the accident and an officer from the Swan River Management Authority ensured that no acid entered the river. The spilt acid was hosed down and subsequently directed into a storm water drain where it was further diluted.

The undamaged drums were reloaded onto the vehicle and removed from the accident scene.

Legal action was instigated against the driver, consignor and prime contractor for breaches of the regulations.

RL

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 4 July 1987 Time Not Known
LOCATION: 38 kilometres south of Cue - Great Northern Highway
DANGEROUS GOODS INVOLVED: Ammonium Nitrate
Class 5.1 Oxidising Agent
UN No. 1942
Packaging Group III
Hazchem 1[S]E Pollutant

SCENARIO

While travelling north along Great Northern Highway the rear trailer of a road train left the bitumen and hit a small bush and drainage culvert. This caused the load to shift and a one tonne bag of ammonium nitrate fell off the trailer spilling some of its contents.

The spilt ammonium nitrate was collected and the bag was lifted back onto the trailer for subsequent delivery.

RL

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 8 July 1987 1530 hours
LOCATION: Service Station, Victoria Park
DANGEROUS GOODS INVOLVED: Petrol
Class 3.1 Flammable Liquid
UN No. 1270
Packaging Group II
Hazchem 3[Y]E Pollutant

SCENARIO

During a routine delivery, the hose connection to the underground tank from the tanker vehicle broke during tanker discharge.

Approximately 50 litres of super petrol was spilt on the ground and this was dispersed by Fire Brigade personnel using water and surfactant.

The cause of the accident was attributed to worn fittings on the transfer equipment.

RL

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 17 July 1987 2030 hours

LOCATION: Great Northern Highway
73km south of Mt Magnet

DANGEROUS GOODS INVOLVED: Liquid Oxygen
Class 2.2 Compressed Non Flammable
Gas, Sub Risk 5.1
UN No. 1073
Hazchem 2PE

SCENARIO

Whilst travelling north along Great Northern Highway the prime mover/trailer combination veered off the road and overturned. The tank containing the liquid oxygen remained intact and the cargo was allowed to discharge into the atmosphere before the vehicle was righted and towed away.

The cause of the accident is attributed to the blowout of a front tyre.

The prime contractor and consignor were reprimanded for failing to submit details pertaining to this accident.

RL

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 22 July 1987 1240 hours

LOCATION: Gnangara Road, Landsdale

DANGEROUS GOODS INVOLVED: Heptachlor 5% solution
(not dangerous goods)
Heptachlor 40% concentrate
Class 6.1 Poison
UN No. 2996
Packaging Group III
Hazchem 3XE

SCENARIO

A pest exterminator's vehicle overturned in a single vehicle accident.

The 5% solution of Heptachlor was contained in 2 fibreglass tanks of approximately 350 l each, affixed to the vehicle. The 40% concentrate solution was contained in approximately 15-20 five litre containers.

Several nearby houses were evacuated for the duration of the recovery phase of the operation and Gnangara Road was closed to traffic for 3 hours. There was an undetermined amount of spillage from the small containers, with all the 5% solution being lost from the tanks.

Contaminated soil was removed from the roadside for disposal at the direction of the Health Department.

JH

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 3 August 1987 0930 hours
LOCATION: Freight yard, Radium Street
Bentley
DANGEROUS GOODS INVOLVED: Kul-a-Fin Binder AC 77
Not dangerous goods but incorrectly
labelled with a UN number and transport
emergency advice

SCENARIO

A 200 L drum of Kul-a-Fin was dropped 1.5m from a trailer. The drum burst and 120 litres of product leaked onto the floor. The product was partially labelled as dangerous goods and Fire Brigade and Police personnel were called to attend.

After it was determined that the product was not dangerous goods the spill was washed away with water.

RL

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 5 August 1987 0800 hours

LOCATION: Service Station
Chester Pass Road
Albany

DANGEROUS GOODS INVOLVED: Petrol
Class 3.1 Flammable Liquid
UN No. 1270
Packaging Group II
Hazchem 3[Y]E Pollutant

SCENARIO

During a refilling operation at a service station, the discharge hose from the tanker separated from the filler pipe on the underground tank and approximately 250 litres of petrol was spilt.

Fire Brigade personnel contained the spill and neutralised it with surfactant and water. The Town Council recovered the contaminated sand for subsequent disposal.

RL

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 18 August 1987 2030 hours

LOCATION: Big Bell Access Road
22km south-west of Cue

DANGEROUS GOODS INVOLVED: Sodium Cyanide
Class 6.1 Poison
UN No. 1689
Packaging Group I
Hazchem 4X Pollutant

SCENARIO

One 22kg drum of sodium cyanide fell off the back of a semi trailer making a delivery of the chemical to a mine site.

The driver was not aware of the loss of the drum when it fell, but noticed the spilt cyanide on his return. After stopping to collect the empty drum and a small quantity of the spilt chemical the vehicle continued on to Mt Magnet.

Emergency services became involved when mine site personnel noticed the spilt cyanide while travelling to Cue to inquire about the missing drum.

The cyanide was collected with a front end loader and disposed of in the Mine's leaching ponds.

RL

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 21 August 1987 0130 hours

LOCATION: Cnr Abernethy Road and Aitken Way
Kewdale

DANGEROUS GOODS INVOLVED: Petroleum Spirit
Class 3.1 Flammable Liquid
UN No. 1271
Packaging Group II
Hazchem 3[Y]E

SCENARIO

While negotiating a right hand turn a 46 000 litre tanker separated from its prime mover and rolled onto its coaming. The tanker shell split at several locations resulting in a petrol spillage of approximately 31 000 litres into the stormwater drains. The spillage flowed into an adjacent swamp and through drains to compensating pits from where recovery took place.

Police blocked public access to the area, and Fire Brigade personnel covered the adjacent swamp and the tanker with foam enabling emergency services to air drill holes into the two sealed compartments and pump the remaining petrol into another tanker.

Flammable vapour concentrations surrounding the tanker and road drains were monitored extensively throughout the clean-up operation.

Righting the empty tanker was achieved by the use of 3 tow trucks, the tanker being rolled onto old truck tyres prior to being towed away.

Examination of the tanker showed that the skid plate buckled severely and all bolts securing it to the tanker subsequently failed.

Tankers of identical design were immediately removed from operation pending results of the stress analysis.

The accident prompted a critical review of skid plate design which subsequently resulted in an increase in the design parameters for skid plates.

No breaches of the regulations were observed.

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 25 August 1987 Time Not Known
LOCATION: Lane Street
Boulder
DANGEROUS GOODS INVOLVED: Nitric Acid
Class 8 Corrosive, Sub Risk 5.1
UN No. 2031
Packaging Group I
Hazchem 2PE

SCENARIO

One 10L plastic container of nitric acid was found leaking on the side of the road and presumed to have dropped from a passing vehicle. One litre of acid had leaked onto the roadway and was hosed away by Fire Brigade personnel. The container and remaining acid were removed for disposal.

RL

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 12 September 1987 0955 hours
LOCATION: 24km north of Mt Magnet on the Great Northern Highway
DANGEROUS GOODS INVOLVED: Sodium Cyanide
Class 6.1 Poison
UN No. 1689
Packaging Group I
Hazchem 4X Pollutant

SCENARIO

A road train was travelling north along Great Northern Highway and without warning the dolly and dog trailer started to swerve before rolling over. The trailer was laden with a freight container containing IBCs of sodium cyanide - 6 of the IBCs split their outer ply walls but the bags remained intact. There was no spillage and no indication of any breach of the regulations.

DB

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 15 September 1987 1845 hours

LOCATION: Transport Depot
Great Eastern Highway
Belmont

DANGEROUS GOODS INVOLVED: Sodium Dichromate
Class 5.1 Oxidising Agent, Sub Risk 6.1a
UN No. 1479
Packaging Group II
Hazchem 1WE

SCENARIO

One of two bags of 25 kg capacity was torn during handling, resulting in a spillage of approximately 2 kg of product at the transport yard.

The Fire Brigade and Health Department attended, the spillage was cleaned up and removed to an approved location.

The consignor was advised of the approved standard of packaging required for this product which is not listed by name in the regulations. (The packages were not of an approved standard).

RL

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 21 September 1987 1510 hours

LOCATION: Cnr Cockburn & Rockingham Road
Naval Base

DANGEROUS GOODS INVOLVED: Sodium Cyanide
Class 6.1 Poison
UN No. 1689
Packaging Group I
Hazchem 4X Pollutant

SCENARIO

While negotiating the corner where Cockburn Road enters Rockingham Road (at an estimated 20 kmph) the driver felt the load on his semi trailer develop an extreme list. In an attempt to prevent the vehicle from overturning the driver increased his turning circle and steered across the verge on the west side of Rockingham Road. There was a vehicle abandoned at this point which prevented the driver from straightening his vehicle completely.

The prime mover clipped the abandoned vehicle before coming to a stop just beyond it. At this stage the loaded semi trailer was still unbalanced and slowly toppled onto the abandoned vehicle, tearing free of the prime mover at the skid plate coupling. The prime mover remained upright and there were no injuries to any personnel.

The freight container remained attached to the trailer and intact although there was some buckling to the left hand wall of the container.

The prime contractor was following in a second vehicle and he proceeded to arrange appropriate lifting gear to right the vehicle while a passing policeman contacted the Police Emergency Section and diverted traffic.

The Fire Brigade were called in to attend although their services were not required.

Damage to the prime mover consisted of a slight buckling of the skid plate and rupturing of the fuel tank (diesel) on the left hand side (punctured by corner of trailer); the sub frame of the trailer was slightly twisted.

Consequently the trailer was righted and towed to the prime contractor's yard where it was examined. Though the drums had shifted (this probably caused the instability) none had ruptured and they were loaded onto another vehicle for delivery to the purchaser.

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 8 October 1987 0745 hours

LOCATION: Cnr Albany Highway & Manning Road
Cannington

DANGEROUS GOODS INVOLVED: Diazinon
Class 6.1 Poison
UN No. 3018
Packaging Group III
Not dangerous goods by virtue of its
dilution (0.4%)

SCENARIO

A utility operated by a Pest Control Company overturned after apparent brake failure and a 60 litre vessel on the vehicle was damaged and leaked the diluted chemical onto the roadway.

Fire Brigade personnel absorbed the chemical with sand and relocated the damaged drum onto another vehicle for removal.

A subsequent spill resulting from the leaking drum on the removal vehicle was similarly cleaned up and rendered safe.

Several houses and business premises were evacuated by the Fire Brigade when it was thought that the product involved was highly concentrated. Occupants were allowed to return when the actual concentration of the mixture was established.

RL

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 5 November 1987 0920 hours

LOCATION: Nicholson Road, Canning Vale near Amhurst Way

DANGEROUS GOODS INVOLVED: Calcium Hypochlorite
Class 5.1 Oxidising Agent
UN No. 2880
Packaging Group III
Hazchem 2P Pollutant

Dichloroisocyanuric Acid (Sodium Salt)
Class 5.1 Oxidising Agent
UN No. 2465
Packaging Group II
Hazchem 2PE

SCENARIO

A flat top truck was being used to transport small packages (4kg and 10kg) of swimming pool chlorine chemicals. Each 1 tonne load of packages was held on the pallet with continuous stretch wrap plastic film binding and the truck was fitted with side gates to secure the load.

The uneven surface on the camber of the old section of road caused the load to move sideways (to the left). Eventually the gates failed and part of the load fell to the ground where several packages split open.

The packages were not of the standard prescribed by the regulations but had been given temporary approval pending production of higher quality packaging.

Police, Fire Brigade and Mines Department attended and supervised the clean up. No property damage or personal injuries were sustained by any other parties.

There were no observed breaches of the Dangerous Goods (Road Transport) Regulations.

DQ

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 11 November 1987 Time Not Known
LOCATION: Great Northern Highway
40km north of Dalwallinu
DANGEROUS GOODS Sodium Hydroxide
INVOLVED: Class 8 Corrosive
UN No. 1823
Packaging Group II
Hazchem 2R

SCENARIO

Five 25kg bags of sodium hydroxide were found on the roadside after having fallen off a passing vehicle.

RL

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 14 November 1987 0130 hours

LOCATION: 22km north of Wubin
Great Northern Highway

DANGEROUS GOODS INVOLVED: Jet A1 Aviation Fuel
Class 3.2 Flammable Liquid
UN No. 1270
Packaging Group II
Hazchem 3[Y]E Pollutant

SCENARIO

Running gear failure on the rear trailer of a double bottom road train heading north, resulted in the vehicle combination becoming unstable. The rear trailer overturned and skidded along the road whilst still attached to the semi trailer.

Damage to the trailer resulted in the leakage of 30 000 litres of fuel and its subsequent loss into the ground.

The tanker was righted and the remaining 2000 L of fuel transferred to another vehicle. The damaged trailer was returned to Perth while the prime mover and lead trailer continued to Newman.

The cause of the accident could not be determined. It was attributed to either tyre failure (blowouts) or a stabiliser bar breaking.

RL

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 20 November 1987 1435 hours
LOCATION: Kewdale
DANGEROUS GOODS INVOLVED: Simazine, (not dangerous goods)
Prefect
Class 6.1 Poison, Sub Risk 3
UN No. 3017
Packaging Group II
Hazchem 3WE Pollutant

SCENARIO

A vehicle was found to have its tray and running gear contaminated with spilled product after unloading at the Perth regional office with a consignment of pesticides from the Eastern States.

The vehicle was dispatched to the premises of a degassing firm for washing down under controlled conditions but that Company declined to wash the vehicle until they knew more about the nature of the contaminant. Enquiries to the Fire Brigade for information resulted in the call out of the Police, Fire Brigade and Health Department.

Enquiries to the consignor, who sent an advisor to the scene, established that the products were Simazine and Prefect. The vehicle was moved to another area where it was washed down under the supervision of the Health Department.

A check by the Mines Department confirmed that the documentation and packaging complied with the requirements of the regulations.

KP

DANGEROUS GOODS ROAD TRANSPORT ACCIDENT REPORT

DATE: 27 November 1987 0300 hours

LOCATION: Great Eastern Highway, Sawyers Valley

DANGEROUS GOODS INVOLVED:

- SOLEX Flammable Liquid Class 3.2
UN No. 1142, Packaging Group II
Hazchem 2X
- OXALIC ACID Poison Class 6.1
UN No. 2449, Packaging Group III
Hazchem 2X
- SULPHURIC ACID Corrosive Class 8
UN No. 1830, Packaging Group II
Hazchem 2P
- SODIUM HYDROXIDE Corrosive Class 8
UN No. 1824, Packaging Group II
Hazchem 2R

SCENARIO

The semi-trailer truck was bringing a load of mixed general cargo and packaged dangerous goods from Adelaide. The driver lost control of the truck at the eastern end of the Sawyers Valley townsite and as a result the vehicle crashed at the bend in the road. The load of dangerous goods was not spread over a great area being held under the truck tray. Only a small amount of chemical leaked from the damaged 200L drums.

The driver was killed in the accident.

Other chemicals in the load were:

BRIGHTENER Z BRITE AP 6 x 25 litres
LEAD CHROMATE colour pigment 20 x 25 kg

Some breaches of the documentation and packaging standards requirements of the Dangerous Goods (Road Transport) Regulations were suspected but these could not be sufficiently established to institute legal proceedings.

DQ

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 27 November 1987 0930 hours
LOCATION: Boulder - (Kalgoorlie Ring Road)
DANGEROUS GOODS INVOLVED: Hydrochloric Acid
Class 8 Corrosive
UN No. 1789
Packaging Group II
Hazchem 2R

SCENARIO

The vehicle involved was a flat top utility which was negotiating a corner when all twelve containers loaded on the tray fell to the road. Three of the 20 litre containers split and some hydrochloric acid was spilled. Estimates of the amount spilled varied between 3 and 8 litres.

The driver was not aware of the accident until he reached his destination and found part of his load missing.

Police and Fire Brigade attended at the scene and the spillage was washed away with copious quantities of water.

The packages (labelling and standard of construction) and documentation complied with the requirements of the Dangerous Goods (Road Transport) Regulations. However, the packages were not adequately restrained contrary to the requirements of Regulations 502(a) and 503(1)(ba) and legal proceedings were instituted by the Police.

KP

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 4 December 1987 2030 hours
LOCATION: Great Northern Highway, Millendon
DANGEROUS GOODS INVOLVED: Sodium Cyanide
Class 6.1 Poison
UN NO. 1689
Packaging Group I
Hazchem 4X Pollutant

SCENARIO

At approximately 2030 hours on 4 December 1987 the trailer portion of a rigid truck-trailer combination overturned on Great Northern Highway, Millendon (approximately 20km from Midland) severely damaging a freight container of sodium cyanide in IBCs.

Police, WAFBB and relevant Government agencies attended the scene to ensure the safe handling and return to Fremantle of the damaged freight container. No sodium cyanide was spilled in the incident.

The seriousness of the incident was compounded by a representative of the transport Company giving misleading evidence to the Police and an Inspector of Explosives and Dangerous Goods and by the substitution of a non-licensed prime mover involved in the accident by a licensed fully complying vehicle.

Both Police and Department of Mines have instituted charges against the Company and driver for these actions.

HD

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 16 December 1987 1400 hours
LOCATION: Cnr Thomas Street & Churchill Avenue
West Perth
DANGEROUS GOODS INVOLVED: Gold Crest Heptachlor 400 EC
Class 6.1 Poison Sub Risk 3.1
UN No. 2762
Packaging Group I
Hazchem 3WE

SCENARIO

A truck carrying 38 cartons of heptachlor on a pallet swerved to avoid a collision with another vehicle and several cartons fell off. Each carton contained 4 x 5L packages.

Several packages split open upon hitting the road resulting in approximately 3 litres being spilled.

Police and Fire Brigade attended the scene and rendered the situation safe.

The cartons were stretch wrapped on the pallet and restrained by 2 angles and 2 ropes. Regulations require vehicles transporting packaged dangerous goods be fitted with approved restraining devices. The above is not considered as an adequate method of securing packages. Gates will now be fitted to the vehicle.

Technical problems precluded legal proceedings from being instituted; a letter of reprimand was sent to the owner of the vehicle instructing that an approved restraining device be fitted to the vehicle.

HZ

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 25 December 1987 1400 hours
LOCATION: Pink Lake Road, 8 kilometres west of Esperance
DANGEROUS GOODS INVOLVED: Petroleum Fuel
Class 3.1 Flammable Liquid
UN No. 1270
Packaging Group II
Hazchem 3[Y]E Pollutant

SCENARIO

The tanker was stolen from the fuel depot in which it was parked and rolled over 8km out of Esperance. The tank was not ruptured and held the 3600L of diesel and 900L of super fuel contained therein.

The tank contents were transferred to another vehicle and the damaged tanker was righted and towed back for repairs.

Fire Brigade personnel attended and hosed a small amount of oil and diesel fuel off the road.

RL

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 27 December 1987 1345 hours

LOCATION: Great Eastern Highway, approximately
8 kilometres west of Merredin

DANGEROUS GOODS INVOLVED: Calcium Hypochlorite (UN 2880, 741kg)
Dichloroisocyanuric Acid (UN 2465, 2793kg)
Tri Chloro Isocyanuric Acid (UN 2468, 1365kg)
All chemicals Class 5.1 Oxidising Agent
Packaging Group II
Hazchem 2PE

SCENARIO

The semi-trailer containing approximately 5 tonnes of chlorinating chemicals was proceeding to Perth from the Eastern States when a bearing overheated and ignited. The resultant fire spread to the chemicals which were loaded at the rear of the trailer.

The driver was alerted by the driver of another vehicle and had time only to disconnect his prime mover and drive away. The driver of the second vehicle, while rendering assistance, was affected by smoke and fumes. He was given oxygen by the local Fire Brigade but refused further medical treatment and left the scene soon after in his own vehicle.

The fire consumed the entire load on the vehicle including a large quantity of general cargo (steel building equipment, PVC pipe glue, etc.) and the semi-trailer was destroyed.

At the height of the fire an extensive plume of smoke and gas was generated and carried by light winds to small towns fifteen kilometres away. These towns (a total of 21 people) were evacuated, but by 6.00pm the smoke had cleared sufficiently to allow all residents to return to their homes. Soon after that the remainder of the load was pushed off the trailer while being sprayed with water. It was subsequently buried nearby.

The documentation and method of loading of the vehicle complied with the Dangerous Goods (Road Transport) Regulations. The placarding of the vehicle may not have complied but in the prevailing conditions this could not be determined with confidence. (The prime-mover had left the scene and the trailer was extensively damaged in the fire). This possible breach of the regulations did not create a significant problem.

KP

GENERAL TRANSPORT ACCIDENTS - MISCELLANEOUS

32. 20 January A semi trailer carrying 24.7 tonnes of industrial lime in 670 kg bags dropped 13 of them onto the road and verge as a result of the load shifting and clipping the street side power poles.
- Police and Fire Brigade attended the site and co-ordinated the clean up operation which was hampered by the severe dust problem due to bag rupture. A water spray was successfully used by firemen to contain the dispersion of dust as the spilled product was loaded into a semi tipper truck. Traffic flow was restricted for several hours whilst the clean up was conducted.
33. 18 April During the late night shift, the driver of the large capacity fork lift vehicle was moving a freight container in a Fremantle holding yard.
- In the shifting process the loaded container was knocked from its first level resting position, 3 metres from the ground. WAFBB officers and WATEAS contact officers attended the callout and it was later found that the product was powdered calcium carbonate and not dangerous goods. The freight container was then left for the chemical company agent to transfer the bagged product.
34. 4 October An ISO tank container overturned out of Boddington. The contents of the tank could not be readily identified and was not leaking. Information from the manufacturer identified the liquid as a viscosity modifier and not dangerous goods. The chemical was transferred to another tank and the damaged tank removed for repair.
35. 16 November While moving a quantity of 2001 drums of Metham Soil Fumigant the forks of the forklift pierced one of the drums causing 201 of the chemical to leak at a West Perth storage yard. Personnel within the yard and downwind from the spill were evacuated to an area of safety while Fire Brigade personnel absorbed the spill with sand and transferred the remaining contents into other containers.
36. 14 December A driver noticed liquid leaking from a carton of nitric acid (Class 6 Dangerous Goods) at a loading ramp. Closer examination revealed that one of the six, 2.25 litre capacity bottles in the carton had broken. The spilled liquid was washed down with water and neutralised with lime.

GENERAL TRANSPORT ACCIDENTS - RAIL TRANSPORT

37. 4 September A pallet containing drums of autospray putty of 20 litre capacity was dropped from a forklift while being unloaded from a rail wagon in the Albany freight yard. 280 litres of the product was spilt and Fire Brigade personnel effected the clean up and disposal of the product.
38. 16 October During the course of the unloading of a rail wagon at a Kewdale freight yard a spillage was noted at the base of one of the drums of hydrochloric acid. As the wagons also contained drums of sodium cyanide, Fire Brigade personnel attended and removed all of the dangerous goods in the wagon before cleaning up the spillage. The spilt liquid was later identified as a mixture of oil and acid.
39. 20 November A 13500 litre capacity rail tank car was found to be leaking petrol while in transit at Gillingarra. The leak was from the discharge pipe and was remedied after several unsuccessful attempts simply by closing the top operated valve to the discharge pipe. The discharge pipe was also fitted with a screw cap which had been cross threaded and which should have prevented any leakage from the inadequately closed discharge valve.

Police, Fire Brigade, Mines Department and Company representatives attended at the scene. The spillage was covered with foam and earth and the area declared safe.

An estimated 600 litres of product was lost over an extended length of railway track which made it impossible to clean up.

EXPLOSIVES AND DANGEROUS GOODS DIVISION

ALBERT HOUSE · 10 VICTORIA AVENUE · PERTH · WESTERN AUSTRALIA · 6000 · TEL. (09) 222 3333

SUMMARY OF DANGEROUS GOODS TRANSPORT ACCIDENTS

	1984	1985	1986	1987
	(10 months only)			
Insecure packages	8	5	6	11
Bulk vehicle overturn	2	6	5	10
Package vehicle overturn	1	1	3	2
Improper handling ¹	1	5	4	8
Package failure in transit	1	2	2	2
Vehicle mechanical problem	1	1	2	1
Single & multi-vehicle accident where dangerous goods were incidental to the accident	1	1	5	3
Tank maintenance inadequate	1	1	-	-
Wilful damage ²	-	-	-	1
Rail tank leak ²	-	-	-	1
TOTAL:	16	22	27	39

1. Includes driver/operator error category from 1985 and 1986.
2. New category 1987.

H Douglas
DIRECTOR

2 March 1988



No.	Location	Goods	Class	Comment
1	Canning Mills	Solvent	3.1	Single vehicle overturn
2	Barradale	Jet Fuel	3.2	Head-on collision 2 roadtrains
3	Myalup	Metham Sodium	6.1	Insecure package loading
4	Girrawheen	Hydrochloric Acid	8	Insecure packages
5	Bayswater	Pesticide	6.1	Insecure packages
6	Geraldton	Diesel Fuel	3.3	Rear trailer overturned
7	Derby	Sodium Hydroxide	8	Insecure packages
8	Belmont	Hydrochloric Acid	8	Insecure packages
9	G N Hwy Cue	Ammonium Nitrate	5	Rear trailer of roadtrain
10	Victoria Park S Stn	Petrol	3.1	Delivery hose separated
11	G N Hwy Mt Magnet	Liquid Oxygen	2.2	Bulk vehicle overturn
12	Landsdale	Pesticide	6.1	Bulk pesticide NDG packages involved
13	Kewdale F Y	Adhesive	NDG	Packages incorrectly labelled
14	Albany S Stn	Petrol	3.1	Delivery hose separated
15	Cue	Cyanide	6.1	Non containerised drum
16	Kewdale	Petrol	3.1	Tanker vehicle overturned
17	Boulder	Nitric Acid	8	Insecure packages
18	G N Hwy Mt Magnet	Cyanide	6.1	Containerised cyanide roadtrain package vehicle overturn
19	Belmont F Y	Sod. Dichromate	5.1	Improper handling - packaging failure
20	Naval Base	Cyanide	6.1	Containerised drums on a semi-trailer
21	Cannington	Diazinon	6.1	Pesticide spray NDG multi vehicle accident
22	Canning Vale	Pool Chemicals	5.1	Insecure loading
23	Dalwallinu	Sodium Hydroxide	8	Insecure packages
24	G N Hwy Wubin	Aviation Fuel	3.2	Rear trailer of roadtrain
25	Kewdale F Y	Simazine	NDG	Package failure in transit
26	Sawyers Valley	Mixed Packages		Single vehicle accident
27	Kalgoorlie	Hydrochloric Acid	8	Insecure packages
28	G N Hwy Millendon	Cyanide	6.1	Rear trailer overturn
29	West Perth	Heptachlor	6.1	Insecure packages
30	Esperance	Fuel	3.1	Stolen vehicle overturned
31	G E Hwy Merredin	Pool Chemicals	5.1	Bearing fire spread to dangerous goods

Miscellaneous Accidents

32	Belmont	Lime	NDG	Rear trailer overturned
33	Fremantle	Calcium Carbonate	NDG	Improper handling
34	Boddington	Viscosity Modifier	NDG	Semi-trailer overturned
35	West Perth F Y	Metham Sodium	6.1	Improper handling
36	Belmont F Y	Nitric Acid	8	Improper handling

Rail Transport Accidents

37	Albany	Auto Putty	3.1	Rail yard improper handling
38	Kewdale	Cyanide plus Acid		Rail yard - packages damaged in transit
39	Gillingarra	Fuel	3.1	Rail tank leak

Abbreviations:

S Stn	=	Service Station
G N Hwy	=	Great Northern Highway
F Y	=	Freight Yard
NDG	=	Not dangerous goods
G E Hwy	=	Great Eastern Highway