EXPLOSIVES AND DANGEROUS GOODS DIVISION

MINERAL HOUSE • 100 PLAIN STREET • EAST PERTH • WESTERN AUSTRALIA • 6004

FOR ALL ENQUIRIES PHONE (09) 222 3333

EXPLOSIVES AND DANGEROUS GOODS ACT 1961-1986

SUMMARY OF ACCIDENT REPORTS 1989

EXPLOSIVES

FLAMMABLE LIQUIDS

DANGEROUS GOODS

DEPARTMENT OF MINES WESTERN AUSTRALIA

ACCIDENT REPORTS – 1989

EXPLOSIVES AND DANGEROUS GOODS ACT 1961-1986

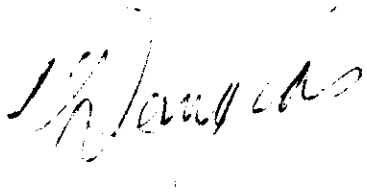
A total of 42 accidents were reported to the Division in 1989, 23 of which were transport incidents involving dangerous goods. These figures are almost identical to those collated in 1988.

Whilst the occurrence of any accident is not appreciated, it is pleasing to see the inspectoral efforts of the Division produce desired results with the majority of road transport accidents being of a minor nature with little or no spillage.

Possibly the most serious incident for the year occurred on rail near Forrest where a major spill of toluene diisocyanate caused short term ill effects to 27 workers and sparked a major inquiry. It is fortunate that such an incident occurred at a remote location.

The Division continued to attend dangerous goods spills emanating from storage facilities, offering technical assistance and advice as requested. Several serious spills were investigated in this area particularly in respect to the storage of acids. Regulations governing the storage of all dangerous goods are currently being drafted and it is anticipated that with their introduction, the number and seriousness of such incidents will be reduced as observed with road transport accidents.

Further progress has been achieved in respect to the computerised recording of accidents, allowing a statistical analysis to be performed on the transport accident data. As the database format and recording system was modelled on existing North American systems it is hoped to distribute the software for use nationally so as to improve the validity of the statistical analysis and in order to observe any trends or deficiencies in operating procedures.



H Douglas
DIRECTOR

10 April 1990

EXPLOSIVES ACCIDENTS

INTRODUCTION

There were 4 accidents involving explosives reported to the Division in 1989, 3 of which were transport related.

One of the incidents involved a fatality largely due to poor maintenance combined with a failure to operate bulk loading equipment in accordance with the intended method by design. As a result of this incident the Division has formulated additional comprehensive rules for the design and operation of equipment used for the manufacture of blasting agents. The application of these rules will see greater emphasis placed on the training of operators of mixing equipment and hopefully avoid the repetition of such accidents.

It is pleasing to note that no accidents have resulted from children acquiring discarded or unsecured explosives, and that overall, explosives have been used and have performed as intended during 1989.

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EXPLOSIVES ACCIDENT REPORT

DATE: 16 May 1989 0815 hours

LOCATION: Minesite
PARABURDOO

EXPLOSIVES INVOLVED: ANFO
Class 1.1
Compatibility Group D
UN No. 0082
Quantity Involved 375 kg

SCENARIO

Flyrock resulting from a blasting procedure caused damage to a minesite vehicle, piercing the roof of its cabin and striking one of the occupants. Fortunately the 100mm diameter rock struck the occupant in the abdominal region causing little injury. Other pieces of flyrock struck the vehicles' windscreen and cases of explosives loaded on the rear tray, causing superficial damage only.

The vehicle involved had been stopped by a blasting crew guard at the perimeter of the exclusion zone, approximately 350 metres from the blast site, to await completion of the blast.

Initial reports indicated that lack of supervision may have resulted in overcharging of the blast holes and subsequent unexpected flyrock - the Mining Engineering Division is investigating. As an interim measure the minimum exclusion zone radius for future blasting was increased to 750 metres.

EA : 4/89 FILE No. : 64/90

EXPLOSIVES ACCIDENT REPORT

DATE: 7 August 1989 1400 hours

LOCATION: Mine Site
SOUTHERN CROSS

EXPLOSIVES INVOLVED: POWERGEL 2500
Class 1.5
Compatibility Group D
UN No. 0241
Quantity Involved 0 kg

SCENARIO

While pumping emulsion explosives from a bulk storage tank into a licensed bowl truck the operator received fatal injuries to the head from the end of the delivery hose (which terminated in a steel camlock coupling) when the hose whipped and jumped out of the hopper.

Investigations showed that a tear in the diaphram of the air actuated diaphram pump allowed high pressure air from the driver side of the pump to enter the slurry line. It is believed that the length of line combined with the high viscosity of the product caused a significant pressure build up in the line as slurry was being forced out. The release of this high pressure air at the unsecured discharge end of the flexible slurry line caused the line to whip violently.

The design method for restraining the discharge - loading hose was not in use at the time as a fitting had been removed from the loading boom to replace a missing fitting on the pump. At the time of the accident the fitting had been replaced but the loading boom was still not being used.

EA : 1/89 FILE No. : 175/89

EXPLOSIVES ACCIDENT REPORT

DATE: 29 August 1989 0915 hours

LOCATION: Stakehill Road
BALDIVIS

EXPLOSIVES INVOLVED: DETONATORS
Class 1.1
Compatibility Group B
UN No. 0360
Quantity Involved 0 kg

SCENARIO

Baldivis Explosives Reserve staff were notified of an accident involving an explosives vehicle and a private passenger vehicle approximately 600 metres from the entrance to the reserve. Emergency services were notified immediately and on attendance found only minor damage to the explosives vehicle.

The vehicle carrying detonators had left the reserve following the approved route and on approaching the first left hand bend collided with the passenger vehicle which is believed to have cut the corner.

The explosives vehicle was permitted to continue its journey after close examination.

EA : 2/89 FILE No. : 208/89

EXPLOSIVES ACCIDENT REPORT

DATE: 25 September 1989 1300 hours

LOCATION: Laverton-Leonora Road
LAVERTON

EXPLOSIVES INVOLVED: ANFO-P
Class 1.1
Compatibility Group D
UN No. 0082
Quantity Involved 100 kg

EMULITE 100
Class 1.1
Compatibility Group D
UN No. 0241
Quantity Involved 0 kg

SCENARIO

A rigid flat top truck transporting 11 tonnes of explosives drifted off the edge of a bitumen road onto gravel causing the driver to lose control and the vehicle to hit a culvert before coming to rest.

Both driver and co-driver sustained minor injuries, however the vehicle incurred substantial damage rendering it inoperable.

Company representatives and emergency services attended the scene and established that the load was secure and intact. Arrangements were made to transfer the load to another vehicle, this being completed by 9.00 pm.

Fortunately spillage was limited to diesel from the vehicle fuel tank and 4 bags of ANFO which were found split during the transfer operation. The diesel was contained and the ANFO washed away after completion of the operation.

EA : 3/89 FILE No. : 213/89

EXPLOSIVES ACCIDENT SUMMARY REPORT FOR THE YEAR 1989

	DATE	LOCATION	GOODS	CLASS	COMMENTS
4/89	16/05/89	PARABURDOO	ANFO	1.1	Flyrock damage and injury resulted from overcharging of a blast pattern believed to have been caused by a lack of supervision.
1/89	07/08/89	SOUTHERN CROSS	POWERGEL 2500	1.5	During emulsion transfer by pumping, hose whipped out of truck hopper inflicting fatal injuries to operator.
2/89	29/08/89	BALDIVIS	DETONATORS	1.1	Explosives vehicle leaving Reserve collided with passenger vehicle which had cut corner - load not involved.
3/89	25/09/89	LAVERTON	ANFO-P	1.1	Explosives vehicle ran off bitumen into culvert injuring driver and co-driver and causing major vehicle damage. Explosives unaffected

END OF SUMMARY REPORT

DANGEROUS GOODS STORAGE ACCIDENTS

Fifteen accidents involving the storage of dangerous goods were investigated by the Division in 1989, compared with l4 the previous year.

Several significant incidents involving loss of containment were recorded, including: 80000 litres of fuel oil found in groundwater under Fremantle Prison; 7000 litres of nitric acid at a factory from a collapsed tank; 4000 litres of sulphuric acid at another factory from failure of tank fittings; and, 400 litres of acrylic acid from loss of control within a processing vessel at a chemical formulating factory.

A flash fire involving propane gas at the North West Shelf Gas Project during maintenance operations could possibly have led to catastrophic results had it not been limited to a small section of the plant equipment.

Major progress was achieved in 1989 in the development of regulations to cover the storage of all classes of dangerous goods. A draft edition was issued for public comment and the comments collated for review in 1990 by a tripartite committee formed by Government for this purpose.

A review of the comments has commenced and publication and gazettal of these regulations is expected towards the latter part of 1990.

Considerable advertising is proposed for the introduction of these regulations and an implementation period of 6 months will be allowed.

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DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 5 January 1989 1040 hours

LOCATION: Lord Street
PERTH

DANGEROUS GOODS INVOLVED: COMPRESSED TOXIC GAS
Class 2.3 Poisonous Gas
Sub-Risk
UN No. 1955
Packaging Group
Quantity Spilled 91 kg

SCENARIO

A cylinder holding a maximum of 91 kg of mixture was moved by hospital staff for connection to sterilizing equipment. An escape of toxic gas was noted by a hissing sound. The cylinder valve could not be closed adequately so Fire Brigade assistance was called for.

To make the area safe, arrangements were made to remove the cylinder to a clear open area to allow complete emptying of the cylinder. This was done on the river side of Gloucester Park, East Perth using the natural breeze to dissipate the gases and a water spray to wash away "frozen gas" around the valve.

The cylinder was empty about an hour after being left with its valve open and allowed to warm up to ambient temperature in the sun. The cylinder was returned to the hospital for safe storage.

DGAS : 1/89 FILE No. : 21/89

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 11 January 1989 1230 hours

LOCATION: Maida Vale Road
MAIDA VALE

DANGEROUS GOODS INVOLVED: FLUOROSCEIN
Class NOT DANGEROUS GOODS
Sub-Risk
UN No.
Packaging Group
Quantity Spilled 0 litres/kg

SCENARIO

A person was removing the head of an old drum when an orange powder was released. Emergency services were contacted and the immediate area evacuated.

Later investigations revealed that the substance was a denaturant mix for application to industrial ethanol, having relatively little hazard.

DGAS : 2/89 FILE No. : 38/89

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 15 March 1989 1500 hours

LOCATION: Morgan Road
CANNINGTON

DANGEROUS GOODS INVOLVED: LIQUEFIED PETROLEUM GAS
Class 2.1 Flammable Gas
Sub-Risk
UN No. 1075
Packaging Group
Quantity Spilled 100 litres

SCENARIO

A flash fire occurred whilst an employee was refilling the fuel tank of an LP Gas forklift truck at an industrial factory site. The operator heard an unusual sound whilst filling, then noticed a flame in the vicinity of a nearby stack of tyres. The fire spread and engulfed the forklift, the 2.7kl LP Gas storage tank and a nearby shed storing packages of solvents and paints.

Investigations revealed that a steel plate delivered to the site had been dragged over the LPG delivery hose causing a small rupture in the hose. It is believed that liquid LPG escaped from the hose during filling and was ignited by an unknown ignition source.

The tank location had not been approved and was found to not comply with the required separation distances to the solvent shed and tyres. This however, was not considered to be the cause of the fire, contributing only to the severity of it.

DGAS3/89 FILE No.62/89

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 22 March 1989 1740 hours

LOCATION: Patino Court
OSBORNE PARK

DANGEROUS GOODS INVOLVED: TOLUENE
Class 3.1 Highly Flammable Liquid
Sub-Risk
UN No. 1294
Packaging Group II
Quantity Spilled 80 litres

SCENARIO

A factory employee was siphoning Toluene from a 200 litre drum to a 20 litre package due to a break down in the pumping equipment normally used for this purpose. Whilst siphoning was in progress the employee was called away to another duty and forgot about his previous job.

Approximately 80 litres was spilt prior to the overflow being detected. Emergency services were contacted and effected clean-up without damage or injury.

DGAS : 4/89 FILE No. : 7/89

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 15 May 1989 2000 hours

LOCATION: Hampton Road
FREMANTLE

DANGEROUS GOODS
INVOLVED: FUEL OIL
Class 3.3 Combustible Liquid
Sub-Risk
UN No. 1270
Packaging Group
Quantity Spilled 80000 litres

SCENARIO

A submersible pump installed in a well within the precincts of Fremantle Prison pumped an oil-water mixture onto landscaping adjacent to Hampton road. Road conditions became hazardous and the road was closed and sand spread on the spill.

It was subsequently discovered that fuel oil had permeated through the rock strata and into the well and it was assumed that this fuel oil had originated from ruptured bunkering pipelines.

An intensive clean up operation was then mounted to recover the spilled oil from the contaminated groundwater.

DGAS : 5/89 FILE No. : 98/89

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 2 June 1989 2305 hours

LOCATION: North West Shelf Gas Project
KARRATHA

DANGEROUS GOODS
INVOLVED: PROPANE
Class 2.1 Flammable Gas
Sub-Risk
UN No. 1978
Packaging Group
Quantity Spilled 0 litres/kg

SCENARIO

In order to remove a start-up strainer contained within a pipe section of the propane refrigerant circuit, a large section of the circuit was isolated by single block valves from the live propane circuit. This section was partially purged with nitrogen prior to opening the pipework by splitting the flanges at the spool.

Leaking gas was detected by explosimeter however the work continued. When the pipe was removed the escaping gas was ignited, probably by the petrol engine forklift used to lift the pipe.

Four employees suffered face and arm burns as a result of the flash fire. The forklift and a fixed lighting installation were damaged.

As a result of this incident maintenence procedures have been reviewed in order to ensure that such incidents cannot be repeated.

DGAS : 15/89 FILE No. : 49/90

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 20 June 1989 0800 hours

LOCATION: Scarborough Beach Road
OSBORNE PARK

DANGEROUS GOODS
INVOLVED: DIESEL FUEL
Class 3.3 Combustible Liquid
Sub-Risk
UN No. 1270
Packaging Group
Quantity Spilled 1000 litres

SCENARIO

The filter casing to an aboveground 400 litre diesel day tank feeding a boiler failed resulting in a continual spill of diesel. The day tank was fed by pumping from an underground tank operating automatically using a level indicator in the day tank.

As fuel leaked from the filter the pump continued to top up the day tank until the spill was detected by workers arriving at the premises.

Fortunately the total quantity spilled was insufficient to create a flow through stormwater drains leading to a nearby lake. The spillage was retained in several manhole pits on route to the lake and recovery was made from these points.

DGAS : 6/89 FILE No. : 121/89

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 1 July 1989 0800 hours

LOCATION: Fargo Way
WESLHPOOL

DANGEROUS GOODS
INVOLVED: NITRIC ACID
Class 8 Corrosive Substance
Sub-Risk 5.1
UN No. 2031
Packaging Group II
Quantity Spilled 7000 litres

SCENARIO

A fibre reinforced plastic tank containing 7000 litres of acid shifted when its supporting platform collapsed. The tank subsequently listed and ruptured with the resulting loss of the contents.

Approximately 4000 litres of the nitric acid was contained within a bunded area and subsequently reclaimed. The remaining 3000 litres was lost to the surrounds and into storm water drains. This was subsequently diluted and neutralized with lime by emergency services.

DGAS : 7/89 FILE No. : 135/89

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 21 July 1989 1715 hours

LOCATION: Jull Street
ARMADALE

DANGEROUS GOODS
INVOLVED: PETROLEUM SPIRIT
Class 3.1 Highly Flammable Liquid
Sub-Risk
UN No. 1271
Packaging Group II
Quantity Spilled 200 litres

SCENARIO

Emergency services were alerted to petrol entering stormwater drains, its source being determined to be the underground petrol tank at the Armadale Police Station. Petrol was seeping through a sand/concrete retaining wall surrounding the area in which the underground tank was situated and it was naturally assumed that the tank had been holed.

The immediate area was evacuated whilst clean up proceeded and the tank contents (34000 litres) were pumped into a road tanker. Later, removal and testing of the underground tank revealed no point of leakage.

Alarms were raised again one week later when a small quantity of petrol was again noticed leaking through the retaining wall however this was believed to be caused by heavy rain at the time, as the tank had been replaced with a new one. The source of the spill could not be determined.

DGAS : 8/89 FILE No. : 162/89

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 31 August 1989 1400 hours

LOCATION: Sparks Road
HENDERSON

DANGEROUS GOODS
INVOLVED: AMMONIA
Class 2.3 Poisonous Gas
Sub-Risk
UN No. 2073
Packaging Group
Quantity Spilled 0 litres/kg

SCENARIO

Ammonia gas was detected during the relocation of old cylinders in a storage shed. Emergency services were notified and moved the cylinders to a safe point outside the shed. All cylinders were removed by the supplier the following day.

DGAS : 9/89 FILE No. : 200/89

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 8 September 1989 0700 hours

LOCATION: Phoenix Road
BIBRA LAKE

DANGEROUS GOODS
INVOLVED: SULPHURIC ACID
Class 8 Corrosive Substance
Sub-Risk
UN No. 1830
Packaging Group II
Quantity Spilled 4000 litres

SCENARIO

A plastic fitting connecting 2 x 10000 litre sulphuric acid storage tanks failed because it was of an incompatible material resulting in spillage. A pipe connecting the bunded area around the storage tanks to a sump had been previously damaged and therefore acid flowed through a hole in this pipe. Because the storage tanks were located in an elevated area, acid flowed for approximately 200 metres before it was redirected by factory employees into another sump. Acid captured in the sump and residual acid on the roadway was neutralised with lime.

DGAS : 10/89 FILE No. : 219/89

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 18 October 1989 1530 hours

LOCATION: Belmont Avenue
BELMONT

DANGEROUS GOODS
INVOLVED: HYDROCHLORIC ACID
Class 8 Corrosive Substance
Sub-Risk
UN No. 1789
Packaging Group II
Quantity Spilled 1 litre

SCENARIO

A forklift operator placed a plastic package on to a wooden pallet and unknowingly caused its puncture due to an upward projecting nail from the pallet.

Minutes later fumes and spillage was observed in the vicinity of the package. Emergency services were contacted whilst staff at the premises contained, diluted and removed the spillage.

Fire Brigade personnel later completed the washdown of the warehouse and removal of the damaged package.

DGAS : 11/89 FILE No. : 234/89

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 18 October 1989 2400 hours

LOCATION: Ocean Reef High School
OCEAN REEF

DANGEROUS GOODS
INVOLVED:

NITRIC ACID
Class 8 Corrosive Substance
Sub-Risk 5.1
UN No. 2031
Packaging Group I
Quantity Spilled 1 litre

SULPHURIC ACID
Class 8 Corrosive Substance
Sub-Risk
UN No. 1830
Packaging Group II
Quantity Spilled 1 litre

SODIUM SULPHIDE
Class 8 Corrosive Substance
Sub-Risk
UN No. 1849
Packaging Group II
Quantity Spilled 1 litre

SCENARIO

Following a break-in of the science block at the Ocean Reef High School, the offenders spilled and mixed several chemicals within the building. The Fire Brigade was alerted by a fire alarm and attended to the clean up.

Spillage was absorbed with sand and disposal arranged. Investigations revealed that the chemical store had been left unlocked on the night.

DGAS : 12/89 FILE No. : 235/89

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 21 November 1989 1045 hours

LOCATION: Poole Street
WELSHPOOL

DANGEROUS GOODS INVOLVED:
ACRYLIC ACID
Class 8 Corrosive Substance
Sub-Risk 3.2
UN No. 2218
Packaging Group II
Quantity Spilled 400 litres

SCENARIO

A new process at a chemical manufacturing company for manufacturing a poly acrylic acid substance resulted in an exothermic reaction and loss of containment of materials from the mixing tank. The foreman/operator of the process was severely burned as a result of the "boil over".

Ambulance services were called to the premises, following which WA Fire Brigade and Police activated the emergency response scheme. Sand was spread over the extensive spillage which was largely cleaned up by firemen wearing protective clothing. The company has ceased blending the substance which was being manufactured as an anti-scale application for boiler operations.

DGAS : 13/89 FILE No. : 257/89

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 26 December 1989 2000 hours

LOCATION: Great Northern Highway
MEEKATHARRA

DANGEROUS GOODS
INVOLVED: LIQUEFIED PETROLEUM GAS
Class 2.1 Flammable Gas
Sub-Risk
UN No. 1075
Packaging Group
Quantity Spilled 11000 litres

SCENARIO

During a routine mine plant inspection, a plant operator detected leaking gas from a 54000 litre LPG tank. Closer examination revealed that the leak source was at two points between the tank manhole and gasket.

Specialist assistance was called for from the Perth equipment/gas supplier and the plant area evacuated. All power was isolated and known ignition sources removed whilst assistance was enroute.

Although engineers found that tightening of the manhole bolts proved an immediate short term remedy, the action taken by minesite management was most appropriate as many minor incidents often escalate to major catastrophes by the deployment of untrained personnel without specialist knowledge. Further monitoring of the tank has been requested in order to ensure that a satisfactory seal has been achieved.

DGAS : 14/89 FILE No. : 270/89

DANGEROUS GOODS STORAGE ACCIDENT SUMMARY REPORT FOR THE YEAR 1989

	DATE	LOCATION	GOODS	CLASS	COMMENTS
1/89	05/01/89	PERTH	COMPRESSED TOXIC GAS	2.3	Leaking cylinder valve noticed during normal change over connection. Valve unable to be closed so contents fully discharged to safe area.
2/89	11/01/89	MAIDA VALE	FLUOROSCEIN	NDG	Uncontrolled work on old drums without prior decontamination resulted in release of substance first thought to be hazardous.
3/89	15/03/89	CANNINGTON	LIQUEFIED PETROLEUM GAS	2.1	Damaged LPG delivery hose from tank resulted in liquid escape during forklift fuel tank filling. Vapour cloud ignited and caused severe fire damage.
4/89	22/03/89	OSBORNE PARK	TOLUENE	3.1	Employee distracted whilst siphoning from drum to small package. 80 litre spill resulted from overflow.
5/89	15/05/89	FREMANTLE	FUEL OIL	3.3	A leaking pipeline discharged oil into groundwater. The leak was discovered by watering operations from a nearby well.
15/89	02/06/89	KARRATHA	PROPANE	2.1	A propane fire occurred during start-up of LNG train 2, at the N.W. Shelf Gas Project. Four people were injured and there was minor material damage.
6/89	20/06/89	OSBORNE PARK	DIESEL FUEL	3.3	Filter casing failure on diesel day tank resulted in 1000 litre spill into stormwater drains. Spillage contained and recovered.
7/89	01/07/89	WELSHPOOL	NITRIC ACID	8	A storage tank bearing 7000 L of nitric acid ruptured, losing its contents.
8/89	21/07/89	ARMADALE	PETROLEUM SPIRIT	3.1	Petrol found seeping into stormwater drains in vicinity of an underground tank. Tank removed and tested but found liquid tight. Source of spill unknown.
9/89	31/08/89	HENDERSON	AMMONIA	2.3	Leaking ammonia detected whilst relocating old cylinders. Situation rendered safe without injury.
10/89	08/09/89	BIBRA LAKE	SULPHURIC ACID	8	A plastic fitting connecting acid storage tanks failed due to it being of incompatible material and resulted in spillage.

NDG = NOT CLASSIFIED AS DANGEROUS GOODS

	DATE	LOCATION	GOODS	CLASS	COMMENTS
11/89	18/10/89	BELMONT	HYDROCHLORIC ACID	8	Forklift placing package on pallet caused puncture due to exposed nail. Minor spillage resulted.
12/89	18/10/89	OCEAN REEF	NITRIC ACID	8	Vandals deliberately spilled and mixed bottles of concentrated acids after breaking into a high school science block.
13/89	21/11/89	WELSHPOOL	ACRYLIC ACID	8	Chemical reaction during process resulted in spillage of acrylic acid and poly acrylic acid.
14/89	26/12/89	MEEKATHARRA	LIQUEFIED PETROLEUM GAS	2.1	Gas leak detected from manhole to 54000 litre LPG tank. Area evacuated until specialist personnel attended and sealed tank.

END OF SUMMARY REPORT

NDG = NOT CLASSIFIED AS DANGEROUS GOODS

DANGEROUS GOODS TRANSPORT ACCIDENTS

INTRODUCTION

Twenty three transport accidents were recorded for 1989 this being equal to the number recorded in 1988. Significantly, 3 of the recorded accidents were rail accidents (the Division does not actively control rail transport) and 4 others involved chemicals that are not dangerous goods. Effectively there were 16 road transport accidents involving dangerous goods in 1989.

A more detailed statistical analysis of the road transport accidents is presented for the first time this year. Accident data collated since 1985 was entered into the computer database and the annual statistics compared with the overall historical data available to date.

The statistics show that exactly half of the 1989 accidents were primarily the cause of operator error i.e. either the driver, prime contractor or consignor. A further breakdown of this figure shows that drivers contributed to or caused half of the accidents in which operator error was the predominant cause. Prime contractors also showed a high rate of contribution to operator error.

These statistics as they currently stand would tend to support the belief that more emphasis is required in respect to driver training and prime contractor expertise in the transport of dangerous goods, and indeed this has been expressed by both Government and industry in Australia and overseas.

Overall however, due consideration must be given to the size of the database; being rather small at this stage the statistical analysis could be biased by a few incidents of a similar nature.

Acceptance of the database software nationwide should improve the level of confidence that can be shown in the statistical analysis.

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DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 7 January 1989 0615 hours

LOCATION: Great Northern Highway
WALEBING

DANGEROUS GOODS
INVOLVED: SODIUM CYANIDE
Class 6.1 Poisonous Substance
Sub-Risk
UN No. 1689
Packaging Group I
Quantity Spilled 0 kg

CORROSIVE LIQUID N.O.S.
Class 8 Corrosive Substance
Sub-Risk
UN No. 1760
Packaging Group III
Quantity Spilled 0 kg

SCENARIO

The driver of a road train swerved off the bitumen road to avoid a rear end collision with a passenger vehicle turning off the road. The passenger vehicle had originally overtaken the road train on an incline then stopped on the down hill stretch to turn right.

As a result of the evasive action the rear trailer slid into a drain culvert and rolled. The freight container loaded with cyanide broke away from the trailer and suffered extensive damage, fortunately the cyanide containers remained intact.

Prosecution action was instigated as a result of this incident. Several breaches were noted including the use of unlicensed vehicles and driver, insufficient marking and conveyance of acids with cyanide.

DGAT : 1/89 FILE No. : 20/89

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 18 January 1989 1030 hours

LOCATION: Great Northern Highway
EAST STRELLEY RIVER

DANGEROUS GOODS
INVOLVED: DIESEL FUEL
Class NOT DANGEROUS GOODS
Sub-Risk
UN No.
Packaging Group
Quantity Spilled 22000 litres

SCENARIO

Recording of this incident was based on reports from the Environmental Protection Authority. A tanker carrying diesel overturned at the East Strelley River crossing resulting in a 22000 litres spillage into the dry river bed.

Approximately 12000 litres was recovered, the remainder seeping into the river bed.

It was determined that heavy rains could flush the seepage out to sea however concerns were expressed should a low flow develop. Downstream water bores were monitored for possible contamination - none being found.

Further concerns were expressed by the Environmental Protection Authority to the vehicle operator at the apparent delay in notification of the spill to relevant Authorities.

DGAT : 9/89 FILE No. : 83/89

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 19 January 1989 0850 hours

LOCATION: Wanneroo Road
OSBORNE PARK

DANGEROUS GOODS
INVOLVED: CORROSIVE LIQUID N.O.S.
Class 8 Corrosive Substance
Sub-Risk
UN No. 1760
Packaging Group III
Quantity Spilled 5 litres

SCENARIO

The driver of a courier vehicle loaded with 180 x 10 litre packages of a mild stainless steel cleaner noticed a sudden load shift whilst in transit. The movement resulted in three of the packages rupturing and spilling a small part of their contents.

Emergency services were notified and attended the scene. Fire Brigade personnel unloaded the vehicle and washed down its contents and the surrounding area.

The consignor of the goods received a severe reprimand in this instance as non - approved packages were involved.

DGAT : 3/89 FILE No. : 22/89

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 24 January 1989 1440 hours

LOCATION: Craige Road
WEST KALGOORLIE

DANGEROUS GOODS
INVOLVED: AMMONIUM NITRATE
Class 5.1 Oxidising Agent
Sub-Risk
UN No. 1942
Packaging Group III
Quantity Spilled 8000 kg

SCENARIO

Whilst negotiating a right hand turn off an unsealed road onto a bitumen road a semi-trailer hopper loaded with ammonium nitrate overturned spilling its load.

The vehicle was righted using two cranes and the uncontaminated spillage reloaded for delivery. A small quantity of contaminated product was washed from the roadside using a water spray.

DGAT : 4/89 FILE No. : 30/89

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 3 February 1989 1400 hours

LOCATION: Blythe Street
YOKINE

DANGEROUS GOODS
INVOLVED: BATTERIES, WET, FILLED WITH ACID
Class 8 Corrosive Substance
Sub-Risk
UN No. 2794
Packaging Group
Quantity Spilled 40 litres

ISOCYANATE SOLUTION N.O.S.
Class 3 Flammable Liquid
Sub-Risk 6
UN No. 2478
Packaging Group
Quantity Spilled 10 litres

SCENARIO

The driver of a vehicle was alerted to a fire in his load whilst in transit. The vehicle was stopped and the fire extinguished with a hose from a nearby house.

The vehicle was loaded with car batteries and a flammable solution in metal packages placed directly on top of the batteries. As the battery terminals were not insulated it is presumed that heat from the shorting terminals across the metal packages caused leakage and the subsequent fire.

DGAT : 6/89 FILE No. : 34/89

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 5 February 1989 1215 hours

LOCATION: Great Eastern Highway
COOLGARDIE

DANGEROUS GOODS
INVOLVED: HYDROGEN PEROXIDE 50%
Class 5.1 Oxidising Agent
Sub-Risk 8
UN No. 2014
Packaging Group II
Quantity Spilled 1160 litres

SCENARIO

A heavy consignment of metal bearing parts was placed on top of two pallets of 20 litre polydrums of 50% hydrogen peroxide and transported from Melbourne to Perth. Somewhere along the route, the peroxide commenced to leak and at Coolgardie it was noticed that smoke was coming from the vicinity of the load. The load caught fire and continued to burn despite attempts to extinguish the blaze. The fire brigade were called and extinguished the blaze and diluted the chemical. The vehicle was saved from destruction but the load was severely damaged.

DGAT : 5/89 FILE No. : 35/89

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 5 March 1989 1500 hours

LOCATION: Karonie Gold Project
KALGOORLIE

DANGEROUS GOODS
INVOLVED: SODIUM CYANIDE
Class 6.1 Poisonous Substance
Sub-Risk
UN No. 1689
Packaging Group I
Quantity Spilled 0 litres/kg

SCENARIO

A semi-trailer loaded with two freight containers carrying intermediate bulk containers (bulka boxes) of solid sodium cyanide rolled onto its side on a mine access road.

The slippery condition of the unsealed road caused by bad weather was considered the cause of the accident. Fortunately the driver sustained only minor injuries and there was no product spillage.

DGAT : 8/89 FILE No. : 68/89

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 10 April 1989 1600 hours

LOCATION: Kwinana Beach Road
KWINANA

DANGEROUS GOODS INVOLVED:
ACC-9 AIR COOLER CLEANER
Class 6.1 Poisonous Substance
Sub-Risk
UN No. 2810
Packaging Group III
Quantity Spilled 25 litres

SCENARIO

The driver of a vehicle making routine deliveries from a wharf dropped one package whilst negotiating a roundabout. The load was not adequately secured due to the close proximity of the delivery point.

On realising that the contents of the spilled package had completely leaked, the driver resumed his delivery and failed to report the incident to emergency services. Emergency services were notified later by a member of the public and attended to the clean up.

The driver was prosecuted by the Police.

DGAT : 7/89 FILE No. : 82/89

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 11 May 1989 0430 hours

LOCATION: East-West Rail Line
FORREST

DANGEROUS GOODS INVOLVED: TOLUENE DIISOCYANATE
Class 6.1 Poisonous Substance
Sub-Risk
UN No. 2078
Packaging Group II
Quantity Spilled 10000 litres

SCENARIO

An Australian National Railways train derailed on the interstate rail system 48 kilometres west of Forrest. The derailment resulted in a spill of toluene diisocyanate, the spill not becoming evident until some time after ill effects were felt by workers at the scene.

Twenty seven men suffered short term medical effects due to exposure to the chemical.

Medical and clean-up assistance was flown in from the east and west and work commenced firstly in treating the exposed personnel and then on neutralisation and clean-up of the spill.

The exact cause of the derailment could not be determined, however an official enquiry revealed that the container had been modified without approval and had these modifications to the tank pipework not been undertaken then a spillage would not have been possible.

DGAT : 22/89 FILE No. : 98/89

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 16 June 1989 1315 hours

LOCATION: Great Northern Highway
DALWALLINU

DANGEROUS GOODS
INVOLVED: IMIDAN PESTICIDE
Class 3.1 Highly Flammable Liquid
Sub-Risk 6.1
UN No. 2784
Packaging Group II
Quantity Spilled 40 litres

SCENARIO

Whilst on a country delivery run the driver of a truck noticed a roadside spillage to the rear of him. He investigated the site and found two pesticide drums on the roadside but did not recognise them as a part of his load nor could he see any disturbance to his load therefore he presumed them not to be his.

Reports were later made to Police that the packages were seen falling from his vehicle and cleanup was arranged in conjunction with the local fire brigade.

The driver of the vehicle was issued with an infringement notice by the Police for insecure loading.

DGAT : 11/89 FILE No. : 159/89

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 22 June 1989 2200 hours

LOCATION: North West Coastal Highway
CARNARVON

DANGEROUS GOODS
INVOLVED: AMMONIUM NITRATE
Class 5.1 Oxidising Agent
Sub-Risk
UN No. 1942
Packaging Group III
Quantity Spilled 20000 kg

SCENARIO

The second and third trailers of a triple bottom road train lost road traction and rolled onto their sides spilling half their contents of ammonium nitrate prill onto the roadside.

Police and fire brigade were notified and cleared the spillage from the road to enable clear traffic access. A major portion of the spillage was recovered for use by a nearby farmer. The remainder was disposed over adjacent countryside to be dissolved by future rainfall.

DGAT : 10/89 FILE No. : 125/89

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 27 June 1989 1315 hours

LOCATION: West Swan Road
WEST SWAN

DANGEROUS GOODS
INVOLVED: DIESEL FUEL
Class NOT DANGEROUS GOODS
Sub-Risk
UN No.
Packaging Group
Quantity Spilled 200 litres

SCENARIO

A diesel fuel tanker belonging to an earthmoving company collected a grader wheel from a work site. As the tanker continued making its deliveries, the wheel dislodged, fell on the fuel pump at the rear of the tanker and broke the aluminium housing of the pump. This resulted in the loss of diesel fuel as the valve between the tank and the pump had not been closed.

The spill, mostly in West Swan Road, extended into Middle Swan Road. Shire workers covered the spill with sand.

The company has been cautioned by the Police to keep the valve closed during transport.

DGAT : 13/89 FILE No. : 172/89

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 15 July 1989 1700 hours

LOCATION: Minesite
KALGOORLIE

DANGEROUS GOODS
INVOLVED: SODIUM HYDROXIDE
Class 8 Corrosive Substance
Sub-Risk
UN No. 1824
Packaging Group II
Quantity Spilled 50 litres

SCENARIO

During the completion stage of an unloading operation in which minesite tanks were being filled with caustic soda from a delivery vehicle, the operator of the vehicle was sprayed with product causing severe burns to the face and leg.

The driver had not followed correct procedures for completing the discharge which was being conducted by air padding. In failing to close valves prior to removing the discharge hose, pressure within the tank forced the residual product to be sprayed up through the top discharge pipe. The driver added to the severity of the incident by failing to wear the protective equipment supplied and failing to familiarise himself with surrounding safety showers.

As a result of this incident, procedures have been revised so as to ensure that tanks are fully vented to atmosphere prior to the removal of discharge hoses.

DGAT : 23/89 FILE No. : 81/90

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 29 July 1989 0730 hours

LOCATION: Thomas Road
FORRESTDALE

DANGEROUS GOODS
INVOLVED: DIESEL FUEL
Class NOT DANGEROUS GOODS
Sub-Risk
UN No.
Packaging Group
Quantity Spilled 500 litres

SCENARIO

The driver of a vehicle carrying two small demountable tanks (one of which was partly filled with diesel) lost control of his vehicle whilst passing through a depression in the road filled with rain water. The vehicle slid sideways and rolled over on the roadside.

Approximately 500 litres was spilled from a leak which developed between the manhole cover and the tank. It appears that gasket failure had allowed the leakage to occur.

The spill was absorbed with the roadside earth and arrangements made to dispose the contaminated soil under supervision of the Environmental Protection Authority.

DGAT : 12/89 FILE No. : 168/89

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 13 August 1989 1040 hours

LOCATION: Leach Highway
ROSSMOYNE

DANGEROUS GOODS
INVOLVED: AVIATION GASOLINE
Class 3.1 Highly Flammable Liquid
Sub-Risk
UN No. 1863
Packaging Group II
Quantity Spilled 0 litres/kg

SCENARIO

A Police vehicle was proceeding east along Leach Highway Rossmoyne and stopped at the controlled intersection with Karel Avenue. A fully loaded tanker then collided with the rear of the stationary vehicle resulting in major damage to the Police vehicle. No damage was done to the tanker.

DGAT : 14/89 FILE No. : 204/89

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 4 September 1989 1907 hours

LOCATION: Capricorn Roadhouse
NEWMAN

DANGEROUS GOODS
INVOLVED: PETROLEUM FUEL
Class 3.1 Highly Flammable Liquid
Sub-Risk
UN No. 1270
Packaging Group II
Quantity Spilled 0 litres/kg

SCENARIO

A petrol tanker suffered an air supply failure and subsequent loss of pressure to the brakes on the lead trailer causing the brakes to operate while the vehicle was moving. The build up of heat caused the front axle group to catch fire. The fire was noticed when the vehicle stopped at the roadhouse and was subsequently extinguished with the vehicle extinguishers and doused with water by the local fire brigade.

DGAT : 15/89 FILE No. : 217/89

RAIL

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 28 September 1989 1000 hours

LOCATION: Fenton Street
KEWDALE

DANGEROUS GOODS
INVOLVED: HYDROCHLORIC ACID
Class 8 Corrosive Substance
Sub-Risk
UN No. 1789
Packaging Group II
Quantity Spilled 200 litres

SCENARIO

While unloading supposedly empty hydrochloric acid drums (4 to a pallet) from a rail wagon, two of the drums fell from the pallet as the forklift travelled up a ramp. It appears the instability of the drums was due to the extremely poor state of the pallets. The drums fell on their sides and acid leaked from the unsealed bungs (bungs in place but not tightened). Most of the 200 litres of spilled acid was contained and neutralised by the fire brigade. Once neutralisation had been completed the site was hosed down.

Investigation showed a number of the drums still contained considerable amounts of acid and the consignor was instructed to ensure the bungs were sealed and to treat the entire load as full drums during the ensuing transport to their premises.

DGAT : 16/89 FILE No. : 220/89

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 4 October 1989 0835 hours

LOCATION: Kwinana Freeway
WEST PERTH

DANGEROUS GOODS
INVOLVED: HYDROCHLORIC ACID
Class 8 Corrosive Substance
Sub-Risk
UN No. 1789
Packaging Group II
Quantity Spilled 0 litres/kg

SCENARIO

Whilst travelling on the freeway the driver of a hydrochloric acid tanker was forced to break suddenly to avoid a motor vehicle which had been forced into his lane by another vehicle. Due to the wet conditions the tanker skidded into the vehicle trapping the driver until emergency services attended.

Fortunately only the motor vehicle was damaged and there was no spillage of load from the tanker.

DGAT : 17/89 FILE No. : 22/89

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 26 October 1989 0710 hours

LOCATION: North West Coastal Highway
CARNARVON

DANGEROUS GOODS
INVOLVED: HAND CLEANING SOLVENT
Class NOT DANGEROUS GOODS
Sub-Risk
UN No.
Packaging Group
Quantity Spilled 50 litres

SCENARIO

A minor spill resulted from a truck rollover. Emergency services attended to the spill and treated the product as dangerous goods in the absence of positive advice to the contrary.

The hand cleaning solvent was packed in 200 litre drums and since it was labelled as a solvent, a first response was to consider the product as dangerous and treat the spill accordingly.

Advice was received later from the transporter confirming that the product was not classified as a dangerous good.

DGAT : 18/89 FILE No. : 245/89

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 30 October 1989 1000 hours

LOCATION: Shepperton Road
VICTORIA PARK

DANGEROUS GOODS
INVOLVED: ARGON, REFRIGERATED LIQUID
Class 2.2 Non-flammable Compressed Gas
Sub-Risk
UN No. 1951
Packaging Group
Quantity Spilled 0 litres/kg

SCENARIO

A 20 kilolitre tanktainer of Argon was loaded at Kewdale rail terminal for delivery to Subiaco. The tanktainer was restrained by twistlocks.

While negotiating a corner the tanktainer shifted and fell from the trailer and landed across a parallel road. The vehicle remained upright but suffered damage to its skidplate. The tanktainer landed on its side, intact, with some damage to its support cradle. It appeared that the twistlocks on the right hand side of the vehicle were inoperative allowing the tanktainer to fall from the vehicle.

Traffic was diverted around the site and the container righted with two cranes, then loaded onto another vehicle and allowed to complete its journey.

DGAT : 19/89 FILE No. : 246/89

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 28 November 1989 1300 hours

LOCATION: Fitzgerald Street
PERTH

DANGEROUS GOODS
INVOLVED: NITROGEN, REFRIGERATED LIQUID
Class 2.2 Non-flammable Compressed Gas
Sub-Risk
UN No. 1977
Packaging Group
Quantity Spilled 150 litres

SCENARIO

A dedicated liquid nitrogen flask was dropped from a vehicle negotiating an intersection, causing the contents to spill and vaporise to atmosphere.

The cause of the spill could only be attributed to insufficient restraint by ropes and as a result the consignor has been requested to review their securing arrangements for use with single consignments of this nature.

DGAT : 20/89 FILE No. : 262/89

RAIL

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 5 December 1989 1100 hours

LOCATION: Noble Road
KEWDALE

DANGEROUS GOODS
INVOLVED: PAINTS, FLAMMABLE LIQUID
Class 3.2 Flammable Liquid
Sub-Risk
UN No. 1263
Packaging Group III
Quantity Spilled 200 litres

SCENARIO

Whilst being destuffed in a road transport depot a rail container of paints was found to contain several leaking packages.

Emergency services were alerted and attended to the clean up and disposal of the spillage.

It is believed that damage was caused to the packages through shunting operations on rail and by forklift handling during unloading. Several packages within the consignment were not of an approved standard and this matter has been brought to the attention of the consignor and the Department of Transport in the state of origin.

DGAT : 21/89 FILE No. : 261/89

DANGEROUS GOODS TRANSPORT ACCIDENT SUMMARY REPORT FOR THE YEAR 1989

	DATE	LOCATION	GOODS	CLASS	COMMENTS
1/89	07/01/89	WALEBING	SODIUM CYANIDE	6.1	Road train taking evasive action to avoid accident, rear trailer rolled. Acid and cyanide together illegally - fortunately no spillage.
2/89	17/01/89	O'CONNOR	TETRAHYDROFURAN	3.1	Leaking valve on ISO tank container allowed T.H.F. to be spilled onto ground during delivery/unloading procedure.
9/89	18/01/89	EAST STRELLEY RIVER	DIESEL FUEL	NDG	Tanker rollover at dry river crossing resulted in large spill of diesel.
3/89	19/01/89	OSBORNE PARK	CORROSIVE LIQUID NOS	8	Sudden load shift in transit caused damage to non-approved packages and minor spill.
4/89	24/01/89	KALGOORLIE	AMMONIUM NITRATE	5.1	Semi-hopper overturned whilst turning at slow speed. Turntable failure suspected.
6/89	03/02/89	YOKINE	BATTERIES, WET, FILLED WITH ACID	8	Shorting of exposed battery terminals stowed under flammable liquid packages believed to have caused leakage and fire.
5/89	05/02/89	COOLGARDIE	HYDROGEN PEROXIDE	5.1	Polydrums of 50% peroxide failed in transit causing fire to general freight and severe load damage.
8/89	05/03/89	KALGOORLIE	SODIUM CYANIDE	6.1	Semi-trailer carrying FIBC'S in freight containers rolled off slippery mine access road - no spill.
7/89	10/04/89	KWINANA	ACC-9 AIR COOLER CLEANER	6.1	Insufficient restraint of packages resulted in loss of one package from vehicle and subsequent spill on impact.
22/89	11/05/89	FORREST	TOLUENE DIISOCYANATE	6.1	Train derailment caused damage to unauthorised modifications on tanktainer pipework - 10,000 litres spill - 27 men affected from exposure.
11/89	16/06/89	DALWALLINU	IMIDAN PESTICIDE	3.1	Two packages fell from truck due to insufficient restraint - minor spillage.
10/89	22/06/89	CARNARVON	AMMONIUM NITRATE	5.1	Rear trailers of road train veered off road causing rollover of second and third trailers and spill of half their contents.
13/89	27/06/89	WEST SWAN	DIESEL FUEL	NDG	Unsecured part of general load shifted damaging fuel transfer pump and resulting in small spillage.

NDG = NOT CLASSIFIED AS DANGEROUS GOODS FOR TRANSPORT PURPOSES

	DATE	LOCATION	GOODS	CLASS	COMMENTS
23/89	15/07/89	KALGOORLIE	SODIUM HYDROXIDE	8	Operator sprayed with residual product in ISO-tank whilst disconnecting discharge hose. Tank not fully vented and valves not closed prior to removal of hose.
12/89	29/07/89	FORRESTDALE	DIESEL FUEL	NDG	Poor road and weather conditions resulted in a vehicle overturn and spillage of diesel from a small demountable tank.
14/89	13/08/89	ROSSMOYNE	AVIATION GASOLINE	3.1	Tanker collided with stationary Police vehicle. No spill.
15/89	24/09/89	NEWMAN	PETROLEUM FUEL	3.1	A wheel fire on a tanker was caused by brake overheating in transit - load not involved.
16/89	28/09/89	KEWDALE	HYDROCHLORIC ACID	8	Acid leaked from open bungs when supposedly empty drums were dropped on their sides during unloading.
17/89	04/10/89	WEST PERTH	HYDROCHLORIC ACID	8	Motor vehicle forced into path of acid tanker on freeway. Impact occurred with resultant minor injuries but no spillage.
18/89	26/10/89	CARNARVON	HAND CLEANING SOLVENT	NDG	Truck rollover with minor spill from 200 L drums. Solvent first thought to be dangerous goods due to label showing "SOLVENT".
19/89	30/10/89	VICTORIA PARK	ARGON, REFRIGERATED LIQUID	2.2	ISO tanktainer fell from its trailer whilst negotiating a corner, due apparently to incorrect restraining (twist locks not locked) - no spill.
20/89	28/11/89	PERTH	NITROGEN, REFRIGERATED LIQUID	2.2	Dedicated liquid nitrogen flask spilled from vehicle due to inadequate restraint by ropes.
21/89	05/12/89	KEWDALE	PAINTS, FLAMMABLE LIQUID	3.2	Leaking flammable paints observed while destuffing a rail freight container.

END OF SUMMARY REPORT

NDG = NOT CLASSIFIED AS DANGEROUS GOODS FOR TRANSPORT PURPOSES

SPECIFIC STATISTICS FOR DANGEROUS GOODS ROAD TRANSPORT ACCIDENTS

	1989	Five Year Average
INCIDENTS INVOLVING BULK CONTAINERS	50	32
INCIDENTS INVOLVING PACKAGES	38	60
INCIDENTS INVOLVING IBC'S	13	7
INCIDENTS INVOLVING NON APPROVED CONTAINERS	13	21
INCIDENTS INVOLVING UNLICENSED BULK VEHICLES	31	12
NON COMPLYING BULK VEHICLES	31	10
NON COMPLYING PACKAGE VEHICLES	31	30
OPERATOR ERROR BY CONSIGNOR	13	3
OPERATOR ERROR BY PRIME CONTRACTOR	38	27
OPERATOR ERROR BY DRIVER	50	34
THIRD PARTY CAUSED OR CONTRIBUTED	19	11

* * * * *

NOTES:

1. INCIDENTS INVOLVING UNLICENSED BULK VEHICLES - this category specifies bulk vehicles only because package carrying vehicles are not required to be licensed to transport dangerous goods.

2. OPERATOR ERROR BY CONSIGNOR, PRIME CONTRACTOR & DRIVER - these categories refer to incidents in which operator error was the predominant cause and which parties contributed to this error.

3. Some incidents involving non dangerous goods (NDG) have been recorded, however these are excluded from statistical analysis.