

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

SUMMARY OF ACCIDENT REPORTS 1990



DEPARTMENT OF MINES WESTERN AUSTRALIA

ACCIDENT REPORTS - 1990

EXPLOSIVES & DANGEROUS GOODS ACT 1961

There were no reported fatalities or major injuries associated with the transport and storage of explosives and dangerous goods in Western Australia in 1990.

This summary reports on 41 accidents, 23 of which are related to transport of dangerous goods, 12 related to storage of dangerous goods and 6 related to activities with explosives.

Remarkably, the number recorded for transport is the same as that reported in both 1988 and 1989. Accidents involving storage of dangerous goods numbered 12, a decrease of three over the previous year while explosives accidents numbered 6, an increase of 2.

The most significant incidents during the year emanated from major storage and handling sites and included a 131,000 litre spill of flammable liquid at the BP Refinery; an 80,000 kg release of methane from the Burrup LNG plant; a 75,000 litre oil spill from the Kwinana/Kewdale pipeline, and an 18,000 litre petrol spill from a country fuel depot. Three of these incidents were caused by operator error and the other was due to equipment failure.

The Division commenced publication of a quarterly newsletter in 1990 which will aid in disseminating information on significant accidents as they are reported. It is anticipated that this form of reporting combined with advice and recommendations will assist in reducing the accident numbers in 1991.



K Price
CHIEF INSPECTOR

30 April 1991

EXPLOSIVES ACCIDENTS

INTRODUCTION

Six accidents involving explosives were reported to the Division during 1990, compared with four in 1989.

Five of the accidents were transport related single vehicle incidents of which the most significant was a spillage of 15 tonnes of bulk emulsion explosives resulting from a trailer rollover. The transport of bulk emulsion explosives on public roads is permitted due to the products' low sensitivity, hence a spill of this nature presented a low hazard to the driver and emergency services.

The 1989 Summary of Accident Reports advised of the pleasing result with respect to there having been no accidents attributed to children acquiring discarded or unsecured explosives. Unfortunately this trend was disrupted late in 1990 when a schoolboy obtained an electric detonator from a friend and initiated it with a battery causing injuries to his hand and leg. This was the only significant explosives related injury reported in 1990.

--- * * * ---

EXPLOSIVES ACCIDENT REPORT

DATE: 20 January 1990 1300 hours

LOCATION: Minesite
NEWMAN

GOODS
INVOLVED: AMMONIUM NITRATE & EMULSION
Class 5.1
Compatibility Group
UN No. 1942
Quantity Involved 1000 kg

FUEL OIL
Class 3.3
Compatibility Group
UN No.
Quantity Involved 100 kg

ENERGAN
Class 5.1
Compatibility Group
UN No. 1479
Quantity Involved 500 kg

SCENARIO

The driver of a blasting agent mixing vehicle reversed his vehicle so as to service blast holes in an open pit operation. He applied the park brake, engaged the power-take off for the mixing unit and apparently changed gear from reverse to neutral. As the driver disembarked from the vehicle, it moved towards the edge of the bench face and tumbled down the face, coming to rest overturned on the bench below.

The contents of the vehicle spilt from the respective vessels and because of the possibility of explosion (explosives and detonators on the vehicle) the site was cordoned off. The ammonium nitrate was dissolved with water and the energan neutralised with detergent.

DGA : 1/90 FILE No. : 39/90

EXPLOSIVES ACCIDENT REPORT

DATE: 20 May 1990 1930 hours

LOCATION: Menzies Rd
GOONGARRIE

GOODS
INVOLVED: EMULITE 1220
Class 1.5
Compatibility Group D
UN No. 0332
Quantity Involved 15000 kg

SCENARIO

A vehicle conveying two containers of emulite was travelling north from Kalgoorlie to Cue. The dog trailer overturned and one of the containers ruptured spilling its contents (15 tonnes) onto the side of the road. The spillage was cleaned from the road and returned to Kalgoorlie for disposal. The driver was later convicted for a drink driving offence.

DGA : 2/90 FILE No. : 123/90

EXPLOSIVES ACCIDENT REPORT

DATE: 10 August 1990 1015 hours

LOCATION: Higginsville
COOLGARDIE

GOODS INVOLVED: EXPLOSIVES, LOW SENSITIVITY
Class 1.5
Compatibility Group D
UN No. 0332
Quantity Involved 0 kg

SCENARIO

A bulk Class 1.5D explosives vehicle loaded with 7 tonnes of explosives collided with a gum tree while executing a left hand turn from the highway onto a mine access road.

Damage was sustained to the front left hand side of the truck and the explosives carried remained intact inside the bulk container.

Investigations following the incident revealed that the driver of the vehicle was not a holder of a Class "B" driver's licence and his "A" Class licence had expired.

DGA : 3/90 FILE No. : 191/90

EXPLOSIVES ACCIDENT REPORT

DATE: 18 August 1990 1400 hours

LOCATION: Mine Access Road
VIA LEONORA

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

SCENARIO

Four cases of detonators (1,200 units) were dispatched from the Kalgoorlie Explosives Reserve in a station wagon. As the driver approached a compound curve 30 km from the destination mine site, the vehicle skidded and then rolled onto its roof.

After a wait of approximately 10 minutes, another vehicle arrived at the scene and the detonators were transferred into this vehicle and taken to the mine site.

The detonators were unaffected, however the driver sustained minor injuries.

DGA : 5/90 FILE No. : 221/90

EXPLOSIVES ACCIDENT REPORT

DATE: 7 September 1990 0600 hours

LOCATION: Minesite
WILUNA

GOODS INVOLVED: POWERGEL 2500
Class 1.5
Compatibility Group D
UN No. 0332
Quantity Involved 0 kg

SCENARIO

A fire occurred on a mobile bulk explosives pumping unit due to an electrical short circuit. Examination of the unit revealed that the throttle cable had worn through the plastic battery cover and shorted out on the positive terminal causing overheating and resultant fire.

The fire damage was limited to the battery, cables, alternator and isolation switch and fortunately did not spread to the load.

Repair of the unit involved replacement of the battery protection with wood and tying of the cables away from the battery to prevent any possibility of a repeat.

DGA : 4/90 FILE No. : 218/90

EXPLOSIVES ACCIDENT REPORT

DATE: 7 October 1990

1730 hours

LOCATION: Camp Site
LANCELIN

GOODS
INVOLVED: ELECTRIC DETONATORS
Class 1.1
Compatibility Group B
UN No. 0030
Quantity Involved 0 kg

SCENARIO

A schoolboy had several electric detonators in his possession at a school recreation camp. He showed them to a friend who later took one from his bag and initiated it with an AA dry cell battery.

The boy sustained injuries to the hand and leg as a result of the detonator exploding.

DGA : 6/90

FILE No. : 267/90

**EXPLOSIVES ACCIDENT SUMMARY REPORT
FOR THE YEAR 1990**

DATE	LOCATION	GOODS	CLASS	COMMENTS
20/01/90	NEWMAN	AMMONIUM NITRATE & EMULSION	5.1	Blasting agent mixing vehicle self propelled over bench face on minesite spilling ingredients.
20/05/90	GOONGARRIE	EMULITE 1220	1.5	15 tonnes of emulsion explosives conveyed on a dog trailer was spilt when the trailer overturned and the container ruptured.
10/08/90	COOLGARDIE	EXPLOSIVES, LOW SENSITIVITY	1.5	Bulk explosives vehicle collided with roadside tree - explosives not involved.
18/08/90	VIA LEONORA	PRIMADET DETONATORS	1.1	A station wagon conveying detonators rolled over as the driver negotiated a compound curve. Detonators remained intact.
07/09/90	WILUNA	POWERGEL 2500	1.5	Throttle cable wore through plastic battery cover on mobile pumping unit. Caused short circuit and fire - limited to electrics.
07/10/90	LANCELIN	ELECTRIC DETONATORS	1.1	A schoolboy obtained an electric detonator from his friend and initiated it with a battery. Injuries sustained to leg and hand.

END OF SUMMARY REPORT

DANGEROUS GOODS STORAGE ACCIDENTS

INTRODUCTION

Twelve incidents involving the storage of dangerous goods were investigated by the Division in 1990, compared with fifteen during 1989.

Seven of the incidents involved flammable or combustible liquids of which three were considered major spillage incidents and were caused by operator error. An 18,000 litre petrol spill from a Northam fuel depot was the result of an operator failing to close a valve to a large storage tank - the spill occurring overnight due to backflow from the tank.

A 131,000 litre naphtha spill occurred at the BP Refinery due to a tank water drainage valve being left open after recommissioning of the tank. The fault was not discovered until 9 hours after filling had commenced and resulted in an 81,000 litre product loss.

A major oil spill occurred at Canning Vale when a pipeline was ruptured by an excavator. Fortunately the excavation aided in containing the 75,000 litre spillage.

Simple precautionary measures could have prevented all of the above three incidents, highlighting the need for industry to ensure that operators are adequately trained and retrained to ensure that correct procedures are followed.

Finalisation of comprehensive storage regulations is proceeding, albeit slowly, however it appears that the circulation of 600 copies of the regulations in draft form for public comment in 1989 has increased public and industry awareness in relation to the safe storage of dangerous goods.

Telephone enquiries to the Division for advice on the safe storage of currently unregulated dangerous goods has shown a sharp increase during 1990, with many companies wishing to comply with the draft regulations prior to their promulgation.

--- * * * ---

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 9 January 1990

0615 hours

LOCATION: Abernethy Road
BELMONT

**GOODS
INVOLVED:**

CHROMIC ACID SOLUTION
Class 8 Corrosive Substance
Sub-Risk 5.1
UN No. 1755
Packaging Group II
Quantity Spilled 40 litres/kg

SCENARIO

A suspected electrical fault started a fire in the laboratory of the Perth Mint.

Fire destroyed a plating bath (made of PVC) of chromic acid within the laboratory causing the spillage of about 40 litres of acid into the nearby stormwater drain.

Sand was used to prevent any further contamination of the drain and hydrated lime was used to neutralise the chromic acid. A liquid waste tanker was employed to pump out contaminated water from the stormwater drain.

The involvement of the acid in the fire was incidental.

DGA : 1/90

FILE No. : 26/90

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 22 January 1990 1720 hours

LOCATION: Nicholson Road
CANNING VALE

GOODS INVOLVED: LUBRICATING OIL
Class 3.4 Combustible Liquid
Sub-Risk
UN No.
Packaging Group
Quantity Spilled 75000 litres/kg

SCENARIO

A multi-product petroleum pipeline between Kwinana and Kewdale was ruptured by an excavator constructing a drainage ditch for a new housing development. Fortunately the pipeline was conveying a lube oil product at the time and not a highly flammable liquid.

A 300mm by 100mm puncture to the pipeline resulted in a spill of approximately 75,000 litres of product which was largely contained within the ditch. Recovery and cleanup was conducted under EPA and Water Authority direction.

DGA : 10/90 FILE No. : 276/90

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 23 January 1990 1250 hours

LOCATION: Hay Street
EAST PERTH

GOODS INVOLVED: ANILINE
Class 6.1 Poisonous Substance
Sub-Risk
UN No. 1547
Packaging Group II
Quantity Spilled 10 litres/kg

SCENARIO

A spillage onto the floor of a photographic laboratory was noticed by employees. The source of the spill was a leaking tap in a 20 litre package used for dispensing aniline.

Employees immediately sealed the leak and absorbed the spilled product with sand.

The Health Department attended, removing the contaminated sand and a section of carpet for safe disposal.

DGA : 2/90 FILE No. : 40/90

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 10 February 1990 1100 hours

LOCATION: Knutsford Road
FREMANTLE

GOODS INVOLVED: F60 FUEL OIL
Class 3.3 Combustible Liquid
Sub-Risk
UN No.
Packaging Group III
Quantity Spilled 1000 litres/kg

SCENARIO

A storage tank for fuel oil was overfilled and the overflow was contained within the bunded area and subsequently absorbed and removed.

DGA : 3/90 **FILE No. : 60/90**

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 17 July 1990 1430 hours

LOCATION: Stretton Place
BALCATT

GOODS INVOLVED: HYDROCHLORIC ACID 25%
Class 8 Corrosive Substance
Sub-Risk
UN No. 1789
Packaging Group II
Quantity Spilled 500 litres/kg

SCENARIO

Emergency services were called to a spill at the premises of a pool chemicals supplier. Approximately 500 litres of concentrated hydrochloric acid was spilled during decanting operations from a tank to 25 litre packages.

The cause of the spill was due to failure of the adhesive used for the PVC elbow connection between the external valve and the storage tank.

The tank was not banded, however it was fortunate that the ground sloped to an internal sump which contained most of the spillage and enabled neutralisation with sodium bicarbonate and lime.

Recovery of the waste was achieved using a vacuum tanker and disposal was organised by the Health Department.

DGA : 4/90 FILE No. : 175/90

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 25 July 1990 2045 hours

LOCATION: Hay Street
SUBIACO

GOODS INVOLVED: COMPRESSED GAS MIX
Class 2.2 Non-flammable Compressed Gas
Sub-Risk
UN No. 1956
Packaging Group
Quantity Spilled 47 litres/kg

NITROGEN COMPRESSED
Class 2.2 Non-flammable Compressed Gas
Sub-Risk
UN No. 1066
Packaging Group
Quantity Spilled 47 litres/kg

SCENARIO

A size "G" carbon dioxide/nitrogen mix cylinder ruptured whilst being filled. The debris from the cylinder caused a nearby nitrogen cylinder to rupture and damaged several others. The filling pressure of the cylinder just prior to failure was measured at 13,000 kPa.

Fortunately damage was limited to property and not personnel; extensive damage to the filling dock being reported.

Initial investigations indicated that the rupture was facilitated by internal pitting corrosion of the cylinder caused by carbonic acid which forms as a result of moisture combining with the carbon dioxide. The likely source of the moisture is from backflushing of gas lines with water/beer by users in the hospitality industry. Testing of all cylinders and further preventative measures have been implemented to prevent a repetition of this incident.

DGA : 7/90 FILE No. : 197/90

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 3 August 1990 0920 hours

LOCATION: Great Eastern Highway
NORTHAM

GOODS INVOLVED: PETROL
Class 3.1 Highly Flammable Liquid
Sub-Risk
UN No. 1203
Packaging Group II
Quantity Spilled 18000 litres/kg

SCENARIO

A section of Great Eastern Highway was closed for a few hours following an 18,000 litre petrol spill at a fuel depot.

Fuel depot staff completed the unloading of a rail tank car into a large storage tank and were prepared to shunt another rail tank car for unloading, but this did not proceed.

Part of the rail tank car unloading procedure was the opening of a valve which would allow the contents of a 2,000 litre underground "slops" tank to be transferred to the storage tank.

One of the staff members forgot to close this valve, which later allowed the backflow of some 19,000 litres of petrol, via interconnecting piping, to the underground tank which overflowed.

The spill area included the depot, the vacant block next door and a small portion of Great Eastern Highway. It was fortuitous that the majority of the spillage was confined to a natural depression on the vacant block next door.

Fire brigade personnel covered the spillage area with foam solution. Recovery of spilled petrol occurred in two phases. Phase 1 included the recovery of the petrol from the roadside and the culvert, to allow road traffic to resume to that section of the road. Phase 2 involved the recovery of petrol from the vacant block.

DGA : 5/90 FILE No. : 189/90

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 12 August 1990 1500 hours

LOCATION: Ledger Road
BALCATT

GOODS INVOLVED: PAINTS, ETC, THINNERS
Class 3.1 Highly Flammable Liquid
Sub-Risk
UN No. 1263
Packaging Group II
Quantity Spilled 500 litres/kg

SCENARIO

Fire started at a sign manufacturing facility at Balcatta.

Premises downwind from the scene were evacuated because of the toxic nature of the combustion products of plastics emanating from the site.

Fire brigade personnel were unable to spray any foam solution into the dangerous goods store because it was located inside the building. The intensity of the fire was such that the brigade personnel could not get close to the store. As a consequence, the total contents of the flammable liquids store were completely destroyed.

The presence of flammable liquids on the premises did not increase the severity of the fire. Most of the plastics stored on the premises continued to smoulder until the following morning.

Police suspected arson as the cause of the fire.

DGA : 6/90 FILE No. : 192/90

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 16 August 1990 1200 hours

LOCATION: Port Area
PORT HEDLAND

GOODS INVOLVED: DIESEL FUEL
Class 3.3 Combustible Liquid
Sub-Risk
UN No.
Packaging Group III
Quantity Spilled 4500 litres/kg

SCENARIO

During a routine pipeline pressure test, procedural errors led to failure of a blanked flange and spillage of diesel from the pipeline.

Most critical of the procedural errors was that of the product being left within the pipeline during the pressure test. Had the correct procedure been adopted i.e. the pressure test conducted hydrostatically, the consequences of a failure would have been minimal.

DGA : 8/90 FILE No. : 198/90

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 26 September 1990

1800 hours

LOCATION: Mason Road
KWINANA

GOODS INVOLVED: RESIN SOLUTION FLAMMABLE
Class 3.1 Highly Flammable Liquid
Sub-Risk 6.1
UN No. 1866
Packaging Group II
Quantity Spilled 20 litres/kg

SCENARIO

Whilst unloading a freight container in storage on a construction site, workers noticed a leaking 20 litre package within the container.

As the package was labelled with dangerous goods diamonds and a Material Safety Data Sheet was not available, fire brigade personnel were called in to effect cleanup.

Disposal was arranged under direction of the Health Department.

DGA : 9/90

FILE No. : 235/90

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 12 October 1990 2015 hours

LOCATION: BP Oil Refinery
KWINANA

GOODS INVOLVED: NAPHTHA
Class 3.2 Flammable Liquid
Sub-Risk
UN No. 1300
Packaging Group III
Quantity Spilled 131000 litres/kg

SCENARIO

A water drainage valve was inadvertently left open after recommissioning of a large storage tank within the refinery. The open valve was not detected until 9 hours after filling of the tank had commenced. During this period an estimated 131,000 litres of product spilled into the bunded area surrounding the tank.

On detection, the valve was closed immediately and the fire crew and recovery team alerted. Approximately 50,000 litres was recovered and the remainder lost to the ground and atmosphere.

The cause of the incident was human error, compounded by non-adherence to written instructions during a routine operation.

DGA : 12/90 **FILE No. : 45/91**

DANGEROUS GOODS STORAGE ACCIDENT REPORT

DATE: 15 December 1990 1400 hours

LOCATION: LNG Plant Burrup Peninsula
DAMPIER

GOODS INVOLVED: METHANE (COMPRESSED)
Class 2.1 Flammable Gas
Sub-Risk
UN No. 1927
Packaging Group
Quantity Spilled 80000 litres/kg

SCENARIO

A relief valve (10RV12) on the feed gas filter separator (V1001A) lifted as a result of the failure of 5/8" tubing on the high pressure side of the pilot valve which actuates the relief valve. In the region of 80 tonnes of hydrocarbon vapour was released to the atmosphere through the existing trunkline onshore terminal vent system, which forms part of the overall relief system. Up to 136 kg of hydrocarbon vapour was released through the failed 5/8" tubing.

The release lasted for approximately 12 minutes and was stopped by isolating the filter separator in question.

DGA : 11/90 FILE No. : 25/91

DANGEROUS GOODS STORAGE ACCIDENT SUMMARY REPORT FOR THE YEAR 1990

DATE	LOCATION	GOODS	CLASS	COMMENTS
09/01/90	BELMONT	CHROMIC ACID SOLUTION	8	Fire at a laboratory caused the melting of a plating bath containing chromic acid solution.
22/01/90	CANNING VALE	LUBRICATING OIL	3.4	Oil spill resulted from pipeline rupture caused by excavator.
23/01/90	EAST PERTH	ANILINE	6.1	Spill onto floor of photographic laboratory from leaking tap in 20 litre package. Spill absorbed and disposed of safely.
10/02/90	FREMANTLE	F60 FUEL OIL	3.3	A storage tank for fuel oil overflowed when overfilled spilling one tonne of product.
17/07/90	BALCATT	HYDROCHLORIC ACID 25%	8	Adhesive failure on PVC elbow between tank and valve caused 500 litre acid spill.
25/07/90	SUBIACO	COMPRESSED GAS MIX	2.2	Steel cylinder ruptured during filling at 13,000 kPa; probable cause was pitting corrosion due to carbonic acid formed by reaction of internal moisture with carbon dioxide.
03/08/90	NORTHAM	PETROL	3.1	Operator failure to close a valve caused the spillage of 18,000 litres of petrol due to backflow from a storage tank within a fuel depot.
12/08/90	BALCATT	PAINTS, ETC, THINNERS	3.1	Fire destroyed a plastics sign manufacturing company. Internal flammable liquid store consumed but incidental to fire.
16/08/90	PORT HEDLAND	DIESEL FUEL	3.3	Failure to comply with procedures caused product spill from pipeline during pressure testing - testing should have been with water.
26/09/90	KWINANA	RESIN SOLUTION FLAMMABLE	3.1	Leaking 20 litre package found inside freight container whilst unloading.

DATE	LOCATION	GOODS	CLASS	COMMENTS
12/10/90	KWINANA	NAPHTHA	3.2	A drainage valve, open for 9 hours caused 131,000 litres of product to spill in a bunded area.
15/12/90	DAMPIER	METHANE (COMPRESSED)	2.1	80 tonnes of natural gas released from a filter separator relief valve at the LNG Plant - Burrup Peninsula.

END OF SUMMARY REPORT

DANGEROUS GOODS TRANSPORT ACCIDENTS

INTRODUCTION

For the third successive year 23 transport incidents were recorded in 1990. Two of these were rail transport accidents and a further four incidents involved goods that are not classified as dangerous goods but are associated with the transport of dangerous goods. In effect there were 17 dangerous goods road transport incidents for 1990 compared with 16 the previous year and a six year average of 19.

The most significant road transport incident in 1990 resulted from the standing legs of a tanker trailer collapsing, damaging the internal valve to one compartment and rupturing the shell of another, resulting in a 14,000 litre petrol spill. The tanker was separated from the prime mover when it developed mechanical problems and was left on unbraced standing legs which could not support the load.

The predominant cause statistics for 1990 confirm that operator error continues to be responsible for many transport accidents with more than 40% of accidents being attributable to this cause. This figure was 50% in 1989 and the 6 year average stands at 39%.

The statistics also show that more than 50% of road accidents involved packaged dangerous goods. This figure supports the general observations by the Division and has led to greater publication of requirements for package transporting vehicles through the Divisional newsletter. Also, additional attention will be directed towards package transporters in 1991 with the aim basically of preventing packages of dangerous goods from falling off trucks.

--- * * * ---

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 3 January 1990 1700 hours

LOCATION: Denning Road
BUNBURY

GOODS
INVOLVED: PETROLEUM FUEL
Class 3.1 Highly Flammable Liquid
Sub-Risk
UN No. 1271
Packaging Group II
Quantity Spilled 14000 litres/kg

SCENARIO

A fully loaded petrol tanker developed mechanical problems shortly after leaving the depot and was consequently returned to the workshop for repairs.

As the repairs involved hot work, the tanker was decoupled from the prime mover and left standing in the yard. Approximately one and a half hours later, the standing legs of the tanker collapsed resulting in the internal valve of the front compartment opening and causing a 250mm gash in the second compartment on impact. Approximately 14,000 litres of petrol was subsequently spilt.

Fire brigade personnel were employed to contain the spillage. Foam was used to suppress the vapour and later the contaminated soil was removed and disposed.

The fully loaded tanker should not have been left on its standing legs as the legs were not braced.

DGA : 1/90 FILE No. : 1/90

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 31 January 1990 1200 hours

LOCATION: Great Northern Highway
VIA NEWMAN

GOODS
INVOLVED: LUBRICATING OILS
Class NOT DANGEROUS GOODS
Sub-Risk
UN No.
Packaging Group
Quantity Spilled - 27000 litres/kg

SCENARIO

The driver of a road train veered off the road approximately 170 km south of Newman, hit a culvert and rolled the vehicle.

The road train consisted of a flat top trailer carrying 23,000 litres of packaged hydrocarbons and a tanker trailer transporting 27,000 litres of lubricating oils. The trailer came to rest upside down and the tanker rolled onto its side.

As much as possible of the packaged products were salvaged and the oil from the tanker was later transferred to another tanker. The stricken tanker was not punctured and only a minor spillage occurred through the hatches weeping.

DGA : 2/90 FILE No. : 150/90

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 6 February 1990 1515 hours

LOCATION: Rockingham Road
NAVAL BASE

GOODS INVOLVED: POISONOUS LIQUID, N.O.S.
Class 6.1 Poisonous Substance
Sub-Risk
UN No. 2810
Packaging Group III
Quantity Spilled 50 litres/kg

SCENARIO

Two 25 litre plastic packages fell from a vehicle as it rounded a corner. Failure of the shrinkwrapping combined with the failure to provide gates caused this incident.

The drums were hit by a following vehicle and lost their contents. Emergency services personnel attended and diluted the chemical with water.

DGA : 3/90 FILE No. : 46/90

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 20 February 1990 2220 hours

LOCATION: Rail Line 220 Km East of
KALGOORLIE

GOODS
INVOLVED: **SPRAYSEED HERBICIDE**
Class 6.1 Poisonous Substance
Sub-Risk
UN No. 3016
Packaging Group III
Quantity Spilled 0 litres/kg

CHLORINE
Class 2.3 Poisonous Gas
Sub-Risk 5.1
UN No. 1017
Packaging Group
Quantity Spilled 0 litres/kg

SCENARIO

Police communications advised of a train derailment approximately 220 kilometres east of Kalgoorlie.

Full emergency notification was conducted due to consignment notes indicating that the train was carrying dangerous goods.

Several carriages had jumped the track but all remained upright and there was no damage or leakage observed from the packages of herbicide on board. Other dangerous goods being carried were nominally empty chlorine cylinders which did not create any significant hazard. Rectification of the incident was left to railway personnel.

DGA : 4/90 FILE No. : 59/90

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 25 February 1990 0650 hours

LOCATION: Gold Mine
CUE

GOODS INVOLVED: DIESEL FUEL
Class NOT DANGEROUS GOODS
Sub-Risk
UN No.
Packaging Group
Quantity Spilled 900 litres/kg

SCENARIO

As a double bottom road train entered a mine site to deliver fuel, the rear trailer slipped on the wet road surface, slid over the edge of the embankment and rolled over.

One compartment of the aluminium tanker was punctured resulting in a spill of approximately 900 litres of diesel.

DGA : 5/90 FILE No. : 65/90

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 8 March 1990 1032 hours

LOCATION: Tydeman Road
NORTH FREMANTLE

GOODS INVOLVED: METHYL BROMIDE
Class 2.3 Poisonous Gas
Sub-Risk
UN No. 1581
Packaging Group
Quantity Spilled 0 litres/kg

SCENARIO

A freight container loaded with 182 x 80 kg cylinders of methyl bromide had been opened for a routine inspection by Department of Agriculture inspectors when it was revealed that some of the load had shifted in transit. Over 100 cylinders had been dislodged, many lying in precarious positions but not damaged.

Fire brigade personnel with breathing apparatus spent three hours carefully destuffing the container. The cylinders were relocated onto an approved vehicle and transferred to the warehouse.

Twelve cylinders on a pallet are normally held together by two 25 mm steel straps but on this occasion polypropylene straps were used. The manufacturers have been requested to review the method of restraint.

DGA : 6/90 FILE No. : 69/90

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 10 April 1990 1525 hours

LOCATION: Fimiston Road
BOULDER

GOODS INVOLVED: SODIUM CYANIDE
Class 6.1 Poisonous Substance
Sub-Risk
UN No. 1689
Packaging Group I
Quantity Spilled - 50 litres/kg

SCENARIO

The driver of a tray top vehicle negotiated a corner too fast causing his load to shift against the side gates. The gates were inadequate and gave way resulting in 20 of the 30 drums of cyanide falling off the vehicle. Four drums ruptured.

The area was cordoned off and the fire brigade wearing breathing apparatus swept the spilt cyanide into a 200 litre drum. The affected area was treated and rendered safe. The cyanide was returned to the gold mine.

A combination of inadequate gates, the cyanide being incorrectly loaded, and excessive speed was the cause of this incident.

DGA : 7/90 FILE No. : 93/90

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 8 May 1990 1330 hours

LOCATION: Loftus Street
LEEDERVILLE

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

SCENARIO

A fire brigade field vehicle stopped a truck placarded with dangerous goods diamonds after sighting white vapours emanating from it. It was revealed that one of the 20 litre packages had a pinhole and approximately 100 ml had leaked. The acid had collected on the tray of the vehicle.

The vehicle was immediately returned to the depot, the contents of the leaking drum were repackaged and all the other packages were carefully examined before being released for transport.

DGA : 9/90 FILE No. : 146/90

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 10 May 1990 1040 hours

LOCATION: Wellington Street
EAST PERTH

GOODS INVOLVED: PETROLEUM SPIRIT
Class 3.1 Highly Flammable Liquid
Sub-Risk
UN No. 1271
Packaging Group II
Quantity Spilled 60 litres/kg

SCENARIO

Whilst negotiating a right hand turn at an inclining intersection the contents of one compartment of a rigid petrol tanker surged through the dip tube due to the cap not being secured by the driver.

Approximately 60 litres of petrol which had escaped from the compartment travelled along the length of the tank top and spilled through the drainage system down to the roadside.

Emergency services were notified by a member of the public and attended to the cleanup.

The driver was reprimanded for failing to secure the load.

DGA : 8/90 FILE No. : 125/90

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 27 June 1990 0015 hours

LOCATION: North West Coastal Highway
VIA PANNAWONICA

GOODS
INVOLVED: OXIDISING SUBSTANCES, N.O.S.
Class 5.1 Oxidising Agent
Sub-Risk
UN No. 1479
Packaging Group II
Quantity Spilled - 70000 litres/kg

SCENARIO

A road train carrying an ammonium nitrate emulsion (used as a precursor in the manufacture of blasting agents) rolled over rupturing its tanks and spilling its entire load.

Recovery of the product was not possible due to the spread of the spill, cleanup was by burial.

DGA : 20/90 FILE No. : 266/90

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 31 July 1990 1200 hours

LOCATION: Marshalling Yards
FORRESTFIELD

GOODS INVOLVED: PETROLEUM SPIRIT
Class 3.1 Highly Flammable Liquid
Sub-Risk
UN No. 1271
Packaging Group II
Quantity Spilled 400 litres/kg

SCENARIO

A convoy of rail cars was departing from the Forrestfield marshalling yards when workmen detected petrol fumes in the yard. Examination of the rail cars revealed that one rail tanker was leaking its load of petrol.

Fire brigade sprayed foam into the spillage area and attempted to plug the leak - but failed.

Company representatives arranged for the contents of the leaking tank car to be transferred to an empty tank car. An air-pump system was used in the transfer operation.

Fortunately, the leakage occurred in an isolated area in the marshalling yards and no evacuations were necessary.

Engineering examination of the tanker revealed that leakage had occurred from a cracked seam.

DGA : 11/90 FILE No. : 187/90

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 6 August 1990 1030 hours

LOCATION: Hasting Street
SCARBOROUGH

GOODS INVOLVED: KEROSENE
Class 3.2 Flammable Liquid
Sub-Risk
UN No. 1223
Packaging Group III
Quantity Spilled 180 litres/kg

SCENARIO

The driver of a fuel tanker was filling a domestic home kerosene tank by pumping when the delivery hose ruptured.

The hose rupture resulted in the spillage of about 180 litres of kerosene into the nearby storm water drain.

The drain was flushed with copious amounts of water and detergent to an isolated sand pit 500 metres away from the spillage site.

Failure of the hose was due to material fatigue.

DGA : 12/90 FILE No. : 188/90

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 8 August 1990 0645 hours

LOCATION: Bannister-Boddington Road
BODDINGTON

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

SCENARIO

A flat top vehicle towing a dog trailer was being driven along the Bannister - Boddington Road when the dog trailer veered off the road down a small embankment into a drain. The trailer, still attached to the towing vehicle, continued along the drain for approximately 100m before hitting a concrete culvert. It then tore away from the vehicle, flipped and with the container still attached, landed in a wet paddock.

Although the freight container was damaged, there was no spillage of product. The container was lifted onto another licensed vehicle and transported to the gold mine for destuffing.

DGA : 10/90 FILE No. : 186/90

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 13 August 1990 1030 hours

LOCATION: Ennis Avenue
ROCKINGHAM

GOODS INVOLVED: CORROSIVE LIQUID, FLAMMABLE, N.O.S.
Class 8 Corrosive Substance
Sub-Risk 3.2
UN No. 2920
Packaging Group III
Quantity Spilled - 3 litres/kg

SCENARIO

A 20 litre package, labelled to indicate that it contained dangerous goods, was found along the median strip on Ennis Road by a passing motorist.

It was not known how long the package had been there, nor was it possible to identify its owner.

Approximately 3 litres of the chemical leaked out of the package and fortunately this was contained within the median strip. The chemical manufacturer's assistance was requested for clean up and disposal operations.

DGA : 14/90 FILE No. : 209/90

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 19 August 1990 1000 hours

LOCATION: Woodie Woodie Road
VIA MARBLE BAR

GOODS INVOLVED: HYDROCHLORIC ACID
Class 8 Corrosive Substance
Sub-Risk
UN No. 1789
Packaging Group II
Quantity Spilled 8000 litres/kg

SCENARIO

Whilst travelling on a rough unsealed country road north of Marble Bar the rear trailer of a road train rolled over spilling its load of hydrochloric acid drums.

Investigations after the incident revealed that the towing eye of the dolly developed a major fatigue crack and failed in transit.

DGA : 13/90 FILE No. : 199/90

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 8 September 1990 0005 hours

LOCATION: Southern Cross - Varley Road
FORRESTANIA

GOODS INVOLVED: HYDROCHLORIC ACID
Class 8 Corrosive Substance
Sub-Risk
UN No. 1789
Packaging Group II
Quantity Spilled 15 litres/kg

SCENARIO

A rigid bulk vehicle overturned on a gravel road causing a minor acid spill through the tank fittings but otherwise the tank remained intact.

The amount of acid lost was minimal and was absorbed by the earth. The contaminated ground was removed for correct disposal; the vehicle was righted and proceeded with deliveries.

DGA : 15/90 FILE No. : 219/90

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 14 September 1990 0800 hours

LOCATION: Fargo Way
WELSHPOOL

GOODS
INVOLVED: EKATIN PESTICIDE
Class 6.1 Poisonous Substance
Sub-Risk 3
UN No. 3017
Packaging Group III
Quantity Spilled 160 litres/kg

SCENARIO

A consignment of goods which included pesticides was enroute from NSW to WA. A portion of the consignment (not pesticide) was unloaded at Kalgoorlie at 0030 hours. The driver noticed a smell but took no action.

The driver delivered the remaining load to a Kewdale road freight terminal at 0730 hours. A leak was noticed at 0800 hours when workers began to unload the consignment.

Canister type breathing apparatus was obtained, but incorrectly used, resulting in one operator being hospitalised at 1000 hours.

Fire brigade attended the site using officers with full breathing apparatus to unload the vehicle and undertake clean up.

The cause of the spillage was found to be friction and vibration of the drums causing fatigue fractures in the steel chimes.

DGA : 16/90 FILE No. : 224/90

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 2 October 1990 1100 hours

LOCATION: Mogumber-Bindoon-Moora Road
MOGUMBER

GOODS INVOLVED: DIMETHOATE
Class 6.1 Poisonous Substance
Sub-Risk 3.2
UN No. 3017
Packaging Group II
Quantity Spilled 5 litres/kg

SCENARIO

A damaged container labelled as dangerous goods was found on the roadside and initially reported to the local Shire offices. The product name on the container was given as Roxion and its contents had been lost due to puncture of the package.

Specialist advice was obtained from the manufacturer (ascertained from the label) and metropolitan police co-ordinated the cleanup operations.

DGA : 17/90 FILE No. : 239/90

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 18 October 1990 1500 hours

LOCATION: Telfer Road
VIA SHAY GAP

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

SCENARIO

A road train transporting a freight container of cyanide and general freight was being driven along the Telfer Road when it hit a deep pothole. The twisting effect on the vehicle resulted in failure of the four high tensile chains securing the freight container. The container lifted, rolled off the vehicle and landed on its side - there was no spillage.

The container was later lifted onto the vehicle and transported to the gold mine. Inspection of the chains revealed that they were weakened by fatigue. The company's securing arrangements were subsequently re-examined.

DGA : 18/90 FILE No. : 247/90

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 23 October 1990

0720 hours

LOCATION: Flinders Street
YOKINE

GOODS INVOLVED: DILUTED PESTICIDE (0.5% DIAZINON)
Class NOT DANGEROUS GOODS
Sub-Risk
UN No.
Packaging Group
Quantity Spilled - 20 litres/kg

SCENARIO

A pest control operator was travelling along Morley Drive when the vehicle travelling in front of him stopped suddenly at the traffic lights. The driver braked heavily to prevent an accident, but the vehicle skidded and tipped on its side adjacent to the road verge.

A small quantity (approximately 20 litres) of bulk diluted pesticide spilled on the road and some entered the nearby stormwater drain. The spilt liquid originated from the rubber hoses attached to the mixing tank.

Fire brigade officers used sand to prevent any further loss of liquid into the drain and absorb the remainder of the spill. The contaminated sand was removed in plastic bags and disposal was arranged by the Health Department.

DGA : 19/90 **FILE No. : 252/90**

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 7 November 1990 1435 hours

LOCATION: Great Eastern Highway
GLEN FORREST

GOODS INVOLVED: SULPHUR POWDER
Class 4.1 Flammable Solid
Sub-Risk
UN No. 1350
Packaging Group III
Quantity Spilled - 700 litres/kg

SCENARIO

A truck carrying general freight together with a consignment of bagged sulphur caught fire enroute, the fire eventually engulfing the load and involving the sulphur.

The fire consumed part of the sulphur prior to being contained by emergency personnel. The remaining sulphur was disposed of under Health Department guidance. The cause of the fire could not be ascertained.

DGA : 22/90 FILE No. : 285/90

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 6 December 1990 1300 hours

LOCATION: Cnr Albany Highway & Welshpool Road
VICTORIA PARK

GOODS INVOLVED: FERROSILICON
Class 4.3 Dangerous When Wet
Sub-Risk 6.1
UN No. 1408
Packaging Group III
Quantity Spilled 100 litres/kg

SCENARIO

One drum of a two drum consignment was dislodged from a vehicle whilst rounding a corner. Straps used to secure the load had moved enroute and the resultant impact dislodged the lid of the drum causing minor spillage. The driver of the vehicle attended to cleanup operations and left the drum on the road verge intending to arrange a mobile hoist to re-load on his return.

In the interim, emergency services were notified, causing some concern until the situation was explained by the consignor. A warning was issued to the driver for failing to advise the Police immediately of the spill and instructions issued to ensure that gates are fitted to the vehicle for future consignments regardless of the quantity involved.

DGA : 21/90 FILE No. : 281/90

DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

DATE: 6 December 1990 2300 hours

LOCATION: Great Northern Highway
CUE

GOODS INVOLVED: DIESEL FUEL
Class NOT DANGEROUS GOODS
Sub-Risk
UN No.
Packaging Group
Quantity Spilled 265 litres/kg

SCENARIO

The rear trailer of a double bottom road train rolled over on the highway 12 kilometres north of Cue causing a diesel spill from a fracture to the discharge piping. Fortunately, the lead trailer which contained petrol, remained upright and was not damaged in the incident.

Recovery was conducted by pumping to another tanker and overall losses were minimal.

The aluminum tanker sustained significant damage to bulkheads and piping, however the shell remained intact.

DGA : 23/90 FILE No. : 299/90

DANGEROUS GOODS TRANSPORT ACCIDENT SUMMARY REPORT FOR THE YEAR 1990

DATE	LOCATION	GOODS	CLASS	COMMENTS
03/01/90	BUNBURY	PETROLEUM FUEL	3.1	Standing legs of a loaded aluminium tanker collapsed resulting in a 14,000 litre petrol spillage.
31/01/90	VIA NEWMAN	LUBRICATING OILS	NDG	Road train rollover resulted in tanker puncture and spillage of oil and packaged greases.
06/02/90	NAVAL BASE	POISONOUS LIQUID, N.O.S.	6.1	Two drums of chemical dropped off a vehicle when it rounded a corner. Inadequate restraint.
20/02/90	KALGOORLIE	SPRAYSEED HERBICIDE	6.1	Train carrying some dangerous goods derailed. Dangerous goods packages not damaged and no leakage.
25/02/90	CUE	DIESEL FUEL	NDG	Rear tanker of a road train conveying diesel slipped on wet road surface resulting in damage to one compartment and 900 litre spill.
08/03/90	NORTH FREMANTLE	METHYL BROMIDE	2.3	Cylinders within freight container shifted in transit due to inadequate restraint. Potentially hazardous situation when opened for inspection.
10/04/90	BOULDER	SODIUM CYANIDE	6.1	Drums ruptured after falling from vehicle. Excessive speed combined with inadequate restraint caused incident.
08/05/90	LEEDERVILLE	HYDROCHLORIC ACID	8	A pinhole in a 20 litre package resulted in a minor spillage.
10/05/90	EAST PERTH	PETROLEUM SPIRIT	3.1	Dip tube cap of tanker compartment left unsecured by driver. Resultant surge enroute escaped compartment and spilled onto roadside.

NDG = NOT CLASSIFIED AS DANGEROUS GOODS FOR ROAD TRANSPORT

DATE	LOCATION	GOODS	CLASS	COMMENTS
27/06/90	VIA PANNAWONICA	OXIDISING SUBSTANCES, N.O.S.	5.1	Road train rollover resulted in tank rupture and product loss (70 tonne) of ammonium nitrate emulsion.
31/07/90	FORRESTFIELD	PETROLEUM SPIRIT	3.1	Weld seam failure resulted in leakage of petrol from a rail tank car.
06/08/90	SCARBOROUGH	KEROSENE	3.2	Rupture of a delivery hose from a road tanker caused the spillage of a small quantity of kerosene. Hose failure due to fatigue.
08/08/90	BODDINGTON	SODIUM CYANIDE	6.1	Dog trailer of vehicle carrying freight containers of cyanide in wooden IBC's veered off road and overturned. No spillage.
13/08/90	ROCKINGHAM	CORROSIVE LIQUID, FLAMMABLE, N.O.S.	8	Package of corrosive liquid found on roadway median strip. Small spill resulted.
19/08/90	VIA MARBLE BAR	HYDROCHLORIC ACID	8	Fatigue failure of dolly towing eye caused rear trailer of road train to rollover spilling its load of drums.
08/09/90	FORRESTANIA	HYDROCHLORIC ACID	8	A vehicle transporting bulk hydrochloric acid overturned and leaked some acid. Tank largely intact.
14/09/90	WELSHPOOL	EKATIN PESTICIDE	6.1	Metal fatigue of 20 litre packages caused leakage of pesticide.
02/10/90	MOGUMBER	DIMETHOATE	6.1	Package marked ROXION found on side of road, contents lost.
18/10/90	VIA SHAY GAP	SODIUM CYANIDE	6.1	Poor road conditions caused failure of fatigued chains securing freight container. Container rolled off vehicle but load unaffected.
23/10/90	YOKINE	DILUTED PESTICIDE (0.5% DIAZINON)	NDG	Driver of pest control vehicle avoiding collision caused rollover and minor spill of dilute pesticide.

NDG = NOT CLASSIFIED AS DANGEROUS GOODS FOR ROAD TRANSPORT

DATE	LOCATION	GOODS	CLASS	COMMENTS
07/11/90	GLEN FORREST	SULPHUR POWDER	4.1	Truck fire engulfed load which included bagged sulphur and consumed part of consignment.
06/12/90	VICTORIA PARK	FERROSILICON	4.3	Straps used to hold a 2 drum consignment moved in transit resulting in dislodged drum from vehicle and minor spill.
06/12/90	CUE	DIESEL FUEL	NDG	Rear aluminium tanker trailer of road train rolled. Shell did not fail but damage to bulkhead and pipework caused spill.

END OF SUMMARY REPORT

NDG = NOT CLASSIFIED AS DANGEROUS GOODS FOR ROAD TRANSPORT

PREDOMINANT CAUSE STATISTICS FOR DANGEROUS GOODS ROAD TRANSPORT ACCIDENTS

	1990		6 YEAR AVG.	
	No.	%	No.	%
Accident	2	11.8	3.3	17.5
Road Conditions	1	5.9	1.5	7.9
Equipment Failure	2	11.8	3.5	18.4
Operator Error	7	41.2	7.5	39.5
Inadequate Maintenance	1	5.9	1.0	5.3
Sabotage/Vandalism	0	0.0	0.2	0.9
Design Fault	1	5.9	0.3	1.8
Construction Fault	0	0.0	0.0	0.0
Unknown/Non Specific	3	17.6	1.7	8.8
TOTAL INCIDENTS	17		19.0	

NOTES:

1. OPERATOR ERROR includes failure of operator to comply with transport regulations.
2. ACCIDENT includes vehicle traffic accidents and general accidental occurrences.
3. EQUIPMENT FAILURE refers to the failure of some component used in the transport, handling or packaging of the dangerous goods.
4. Some incidents involving non dangerous goods (NDG) have been recorded, however these are excluded from statistical analysis.
5. Decimal averages are rounded up to one place.