

**EXPLOSIVES AND DANGEROUS GOODS ACT 1961**

**SUMMARY OF ACCIDENT  
REPORTS**

1994

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## SUMMARY OF ACCIDENT REPORTS 1994

### OVERVIEW

Two areas dominated the Dangerous Goods accident scene in Western Australia in 1994: operator error and maintenance.

Operator error, or more accurately, failure to follow standard operating procedures, was again the major cause of accidents involving dangerous goods in 1994. 50% of explosives accidents, 30% of storage accidents (down from 35% last year), and 53% of transport accidents (down from 60% last year) were attributable to this cause.

The educational programs initiated in 1993-4 do not seem to be having the desired effect and the Division is now considering alternative strategies including a greater reliance on prosecution.

There was a major increase in the accident rate attributed to poor maintenance in 1994. There appears to be no obvious cause for the increase and the Division is exploring ways to ensure that industry reduces accidents attributed to maintenance failures.

Other areas of significance in the overall picture were ammonia leaks from refrigeration units and the xanthates incident. The Division will be working extensively with DOHSWA to reduce the number of ammonia leakages from refrigeration units in 1995.

If media coverage is any indication, the fire on 5 November and subsequent interim storage of Potassium Amyl Xanthate (PAX) from South Africa was the most significant incident of 1994. No one was injured in the incident and the primary lesson learnt was the need to communicate, particularly with local government. After several days of temporary storage at Kwinana, the product was transported without incident to a minesite near Leinster where it was used in a flotation process as originally intended.

On a more positive note, the Division has closely observed cyanide transport operations during the year. Only one vehicle crash occurred in 1994 in which the vehicle was transporting cyanide. And the load in that case was incidental to the crash; no product was spilt in the accident which is consistent with what has occurred for the past 4 years.

In conclusion, the accident rate for dangerous goods appears to be reasonably steady, there is room for improvement and this is no time for industry to be complacent.

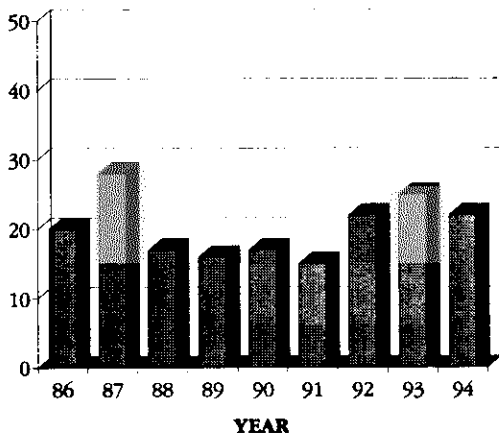


**K Price  
Director  
Explosives and Dangerous Goods Division**

21 February 1995

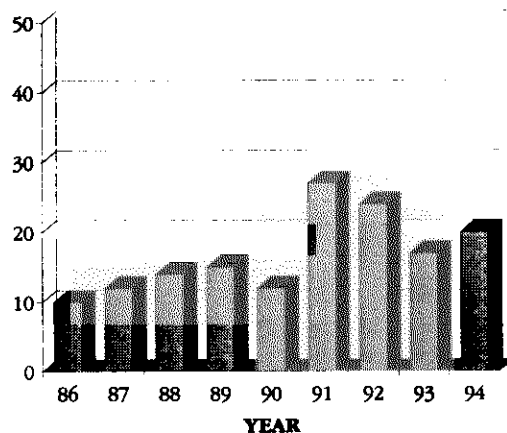
# EXPLOSIVES AND DANGEROUS GOODS ACCIDENT STATISTICS

**ROAD TRANSPORT ACCIDENTS**



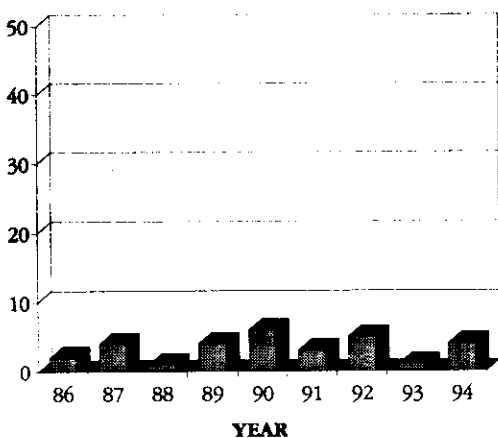
The number of dangerous goods road transport accidents reported in 1994 was slightly less than in 1993. This number is comparable with the nine year average of approximately 20. Again, there was an even distribution of accidents throughout the year.

**STORAGE ACCIDENTS**



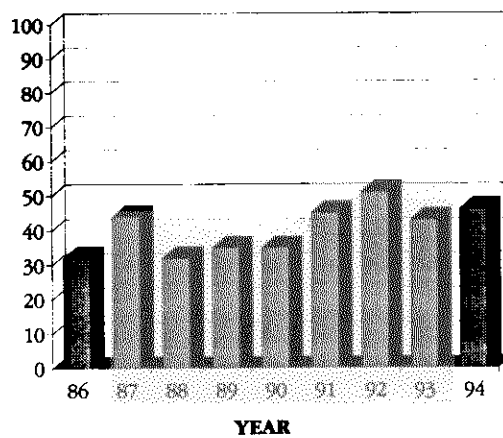
The number of storage accidents recorded in 1994 was slightly greater than that recorded in the previous year. The "Major Hazard Sites" contributed only four accidents to the overall total.

**EXPLOSIVES ACCIDENTS**



The number of explosives accidents recorded for 1994 is comparable with the numbers recorded in previous years, however the low overall numbers do not allow for accurate trends to be drawn.

**TOTAL ACCIDENTS**



The total number of accidents reported for 1994 was greater than that for 1993 and is in excess of the overall recorded average of approximately 40.

## **EXPLOSIVES ACCIDENTS**

### **INTRODUCTION**

Four accidents involving explosives were reported to the Division during 1994 compared with only one in 1993.

Two of the accidents involved explosives mixing vehicles while transporting explosives. The accidents were not directly caused by the products themselves.

The other two accidents involved the use of explosives. In one accident, a detonator was unknowingly used as part of a science demonstration by a relief teacher. The teacher sustained injuries to her thigh.

The other accident involved the use of a maroon, a pyrotechnic device, by an experienced operator. Unfortunately due to a failure to follow standard procedures, the maroon initiated prematurely. The operator sustained injuries to his hand.

These two accidents again highlight the need for education and reinforcement in the proper use of explosives to prevent the recurrence of such incidents.

## EXPLOSIVES ACCIDENTS SUMMARY REPORT

### For Year 1994

	<b>Date</b>	<b>Location</b>	<b>Goods</b>	<b>Class</b>	<b>Comments</b>
W1/94	21/1/1994	WUBIN	BULK EMULSION	1.5	Brake failure on an explosives mixing vehicle allowed it to roll backwards and roll over when it rolled up a windrow.
W2/94	18/5/1994	KALGOORLIE	BULK EMULSION	1.5	An explosives mixing vehicle rolled over when it failed to negotiate a bend on a gravel road.
W3/94	23/6/1994	LANCELIN	DETONATORS, ELECTRIC, FOR BLASTING	1.1	A relief teacher sustained injuries to her thigh when she connected an electric detonator to a battery.
W4/94	2/10/1994	MURCHISON	GIANT MAROON	1.1	During a pyrotechnic display an operator was injured when he left a power line open whilst connecting a maroon.

## EXPLOSIVES ACCIDENT REPORT

**Date** : 21 January 1994      **Time** : 1100 hrs  
**Location** : Minesite  
              WUBIN  
**Explosives:** BULK EMULSION  
**Involved** : Class 1.5  
              Compatibility Group D  
              UN No. 0332  
              Quantity Present : 7500 kg  
              Quantity Involved : 2000 kg

### SCENARIO :

The driver of an explosives mixing vehicle encountered mechanical problems whilst ascending the ramp of an open pit. The vehicle was fully laden and the driver stopped the vehicle to change gears. The brakes failed and the vehicle rolled backwards.

The driver negotiated the vehicle up a windrow in an attempt to stop it, but it subsequently rolled over.

The bin hatches opened on impact allowing ammonium nitrate to spill out onto the ground. The impact also caused a tear in the emulsion tank which led to the loss of some of the emulsion product.

The driver was not injured in the incident and clean-up operations were instigated by the explosives company.

Further investigation determined that an operator had removed a hydraulic line, which had corroded due to the presence of ammonium nitrate and moisture, from the rear braking system, effectively disabling the rear brakes.

The problem of brake line corrosion has since been rectified and a hazard alert was distributed to all company sites throughout Australia alerting staff to this problem.

**EX** : W1/94      **File No.** : 16/94

## EXPLOSIVES ACCIDENT REPORT

**Date** : 18 May 1994                      **Time** : 0805 hrs

**Location** : Daveyhurst Access Road  
KALGOORLIE

**Explosives:** BULK EMULSION

**Involved** : Class 1.5  
Compatibility Group D  
UN No. 0322  
Quantity Present : 8 tonnes  
Quantity Involved : 4 tonnes

### SCENARIO :

The driver of an explosives mixing vehicle travelling along a gravel road approached a bend too fast. The driver applied the brakes but they locked up and realising he was unable to negotiate the bend, proceeded into the bush. The vehicle travelled 50 metres, hit a rock, and overturned.

The driver suffered some minor bruising and was taken to the regional hospital for treatment. Approximately 4 tonne of unsensitised emulsion was spilt due to damage to the top hatch.

Company personnel made arrangements for the clean-up and disposal of the spilt product. The vehicle was then returned to the Kalgoorlie Explosives Reserve.

No further action was taken by the Division.

**EX** : W2/94                      **File No.** : 100/94



## EXPLOSIVES ACCIDENT REPORT

**Date** : 23 June 1994                      **Time** : 1325 hrs

**Location** : Lancelin Primary School  
LANCELIN

**Explosives:** DETONATORS, ELECTRIC, FOR BLASTING

**Involved** : Class 1.1  
Compatibility Group B  
UN No. 0030  
Quantity Present : 6  
Quantity Involved : 1

### SCENARIO :

A relief teacher at a primary school sustained injuries to her thigh and was taken to a suburban hospital when a detonator exploded in her lap.

The teacher was setting up an electricity experiment prior to the students coming to class. The experiment was to demonstrate electricity by means of connecting wires to a battery and a small light globe. The teacher was unaware that the wires she was using were part of an electric detonator and when she connected them to the battery the detonator exploded.

A thorough investigation into the incident has not revealed how the detonators came to be at the school, but any criminal intent has been ruled out. Action has been taken to require the Education Department to inform other schools of the accident in order to prevent the recurrence of such an incident. The remaining detonators were removed for destruction.

**EX** : W3/94                      **File No.** : 112/94

## EXPLOSIVES ACCIDENT REPORT

**Date** : 02 October 1994                      **Time** : 1235 hrs

**Location** : Wooleen Station  
MURCHISON

**Explosives:** GIANT MAROON

**Involved** : Class 1.1  
Compatibility Group G  
UN No. 0428  
Quantity Present : 6  
Quantity Involved : 1

### SCENARIO :

During an exercise at a remote station in the Murchison, an experienced pyrotechnics operator was injured when a giant maroon initiated prematurely.

Four of the six maroons had been fired safely and the operator thought that he had ample time to reload the remaining two maroons. The operator found that he did not have as much time as originally anticipated, panicked, changed his procedure midway through the operation and found himself connecting a maroon to a live power source.

Fortunately, the maroon was on the ground in front of the operator, but he still received lacerations to his hands and face and suffered concussion. He was flown by the Royal Flying Doctor Service to a hospital in Perth.

The Division has subsequently inspected the firing equipment.

**EX** : W4/94                      **File No.** : 191/94

## **DANGEROUS GOODS STORAGE ACCIDENTS**

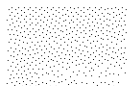
### **INTRODUCTION**

Twenty accidents involving the storage of dangerous goods were reported to the Division in 1994, compared with 17 in 1993. This represents an accident rate of approximately 3.3 per 1000 premises currently licensed to store dangerous goods.

Perhaps the most significant incident for the year was that involving three intermediate bulk containers of potassium amyl xanthate which were part of a consignment unloaded at Fremantle for testing after a product alert was issued by the manufacturer. A subsequent fire caused the evacuation of approximately 100 homes and resulted in considerable public concern.

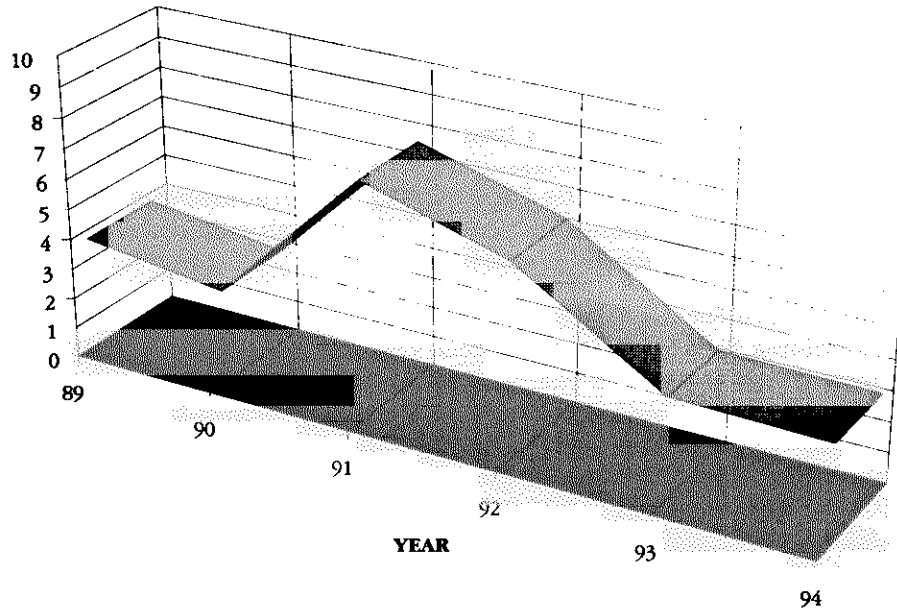
One area of concern for the Division is the number of incidents involving the release of ammonia from industrial refrigeration systems. There have been seven such incidents over the last two years. Most of these incidents have occurred during maintenance of refrigeration equipment, an area which is not directly within the scope of the Dangerous Goods Regulation 1992. These incidents are attended (and recorded) due to the significant quantities of ammonia stored as part of the systems and the potential impact on public safety. Fortunately all incidents have to date have been small in impact, usually requiring minor evacuation and temporary plant shutdowns. The Division has been liaising with the Department of Occupational Health Safety and Welfare for a combined approach to improve safety in this area.

Overall, the effects of most incidents for the year were retained within the premises on which they occurred. There were no fatalities, no serious injuries and no major property damage in 1994 resulting from dangerous goods in storage.



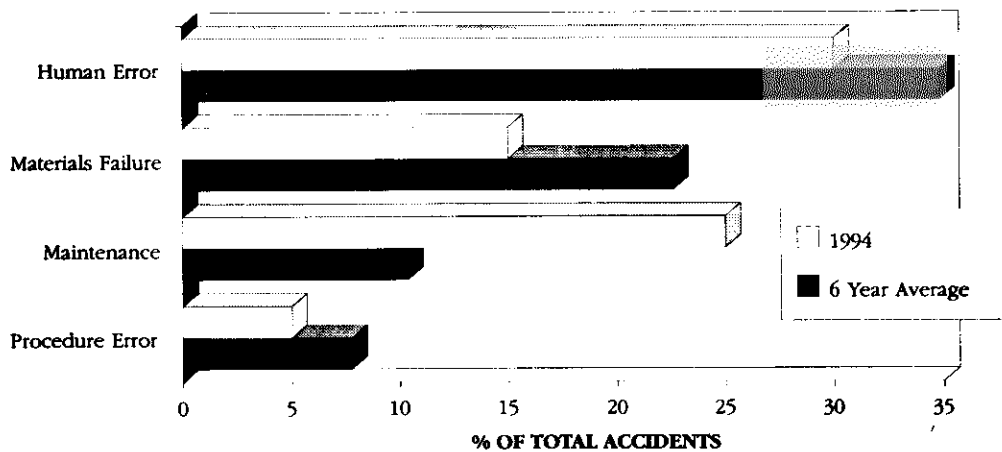
## SELECTED STORAGE ACCIDENT STATISTICS

NUMBER OF ACCIDENTS PER 1000 LICENCED PREMISES



Prior to 1993 only Class 3 (Flammable Liquids) storage was licensable. The 1994 average of 3.3 accidents per 1000 licensed premises is below the 6 year average of 4.4. The 1991/92 peaks could be a result of greater industry awareness of reporting requirements as this was during the consultative phase of developing the Dangerous Goods Regulations 1992.

CAUSES OF STORAGE ACCIDENTS



Most of the major causal groups showed a slight decrease for 1994. Unfortunately the contribution of maintenance issues to accidents increased sharply in comparison to the 6 year average and the Division will be addressing this matter in 1995.

## DANGEROUS GOODS STORAGE ACCIDENTS SUMMARY REPORT

### For the Year 1994

	Date	Location	Goods	Class	Comments
W6/94	3/1/94	KWINANA	CHLORINE	2.3	A small quantity of liquid chlorine was released from a chlorinator during a chlorine drum changeover.
W1/94	20/1/94	KUNUNURRA	DIESEL FUEL	3	Diesel was spilled into Lake Kununurra when tank isolating valves were left open during filling operations.
W15/94	23/2/94	KWINANA	TITANIUM TETRACHLORIDE	8	During the procedure to remove an item of plant for cleaning, titanium tetrachloride which was lodged behind a scale deposit was spilt.
W3/94	23/3/94	KWINANA	CHLORINE	2.3	An inexperienced operator was sprayed with chlorine gas while attempting to repair a damaged chlorinator gas fitting.
W2/94	25/3/94	NEWBURN	NITRIC ACID	8	Nitric acid overflowed during tank filling operations and spilt into a surrounding bund. When emptying the bund a valve failed allowing acid to spill out onto the ground.
W16/94	30/3/14	KEMERTON	TITANIUM TETRACHLORIDE	8	Contaminants which entered a storage tank caused a tank valve to fail, resulting in an emission of titanium tetrachloride.
W4/94	6/4/94	KWINANA	LIQUEFIED ANHYDROUS AMMONIA	2.3	A truck, with its tray raised, collided with an overhead pipeline gantry causing the of phosphoric acid and ammonia.
W12/94	3/6/94	NORTH FREMANTLE	PETROL	3	Cracked floor welds in an 800 kilolitre petrol tank released 100 litres of product into the surrounding bund.
W5/94	14/6/94	MILLSTREAM	DIESEL FUEL	3	While transferring diesel fuel between tanks, a valve was inadvertently left open allowing diesel to spill out onto the ground.
W17/94	20/7/94	DAMPIER	METHANE	2.1	Due to bolt fatigue a valve cover on a compressor blew off resulting in the loss of gas and condensate.

## DANGEROUS GOODS STORAGE ACCIDENTS SUMMARY REPORT

	<b>Date</b>	<b>Location</b>	<b>Goods</b>	<b>Class</b>	<b>Comments</b>
W10/94	19/8/94	CANNING VALE	TOLUENE DIISOCYANATE	6.1	While transferring toluene diisocyanate (TDI) from an isotainer to a tank, a filter was ruptured and TDI was spilt.
W8/94	26/9/94	CANNING VALE	LIQUEFIED ANHYDROUS AMMONIA	2.3	During routine maintenance on a beer chiller, liquid ammonia entered a pump down compressor blowing the head gasket and allowing ammonia to leak.
W7/94	9/10/94	OSBORNE PARK	LIQUEFIED ANHYDROUS AMMONIA	2.3	While carrying out maintenance work on the pipework of a refrigeration system, an isolating valve failed releasing anhydrous ammonia.
W9/94	30/10/94	NORTH FREMANTLE	LIQUEFIED ANHYDROUS AMMONIA	2.3	The failure of a sight glass on a refrigeration unit oil separator released ammonia into a factory.
W11/94	5/11/94	O'CONNOR	POTASSIUM AMYL XANTHATE	4.3	A fire involving three intermediate bulk containers of potassium amyl xanthate at a transport yard caused the evacuation of about 100 homes.
W18/94	7/11/94	NORTH FREMANTLE	DIESEL FUEL	3	A leak of diesel occurred in a pipeline undergoing an annual pressure test. The diesel was being used as the test medium.
W19/94	21/11/94	KWINANA	TITANIUM TETRACHLORIDE	8	A false reading from a level controller led to a tank overfilling and the release of titanium tetrachloride from a seal on an associated pump.
W20/94	15/12/94	KWINANA	PHOSPHORIC ACID	8	Employees draining a phosphoric acid import line, prematurely removed a spool piece from the line allowing acid to spill onto the dock.
W13/94	22/12/94	KWINANA	PHOSPHORIC ACID	8	The failure of a gasket on the outlet of a supply pump led to the spill of phosphoric acid through a flange.
W14/94	24/12/94	SUBIACO	COMPRESSED OXYGEN	2.2	A compressed oxygen cylinder which was part of a manifold package failed, releasing the contents of the entire manifold package.

## DANGEROUS GOODS STORAGE ACCIDENT REPORT

**Date** : 03 January 1994 **Time** : 1100 hrs

**Location** : Gilmore Avenue  
KWINANA  
CHLORINE

**Dangerous Goods Involved** : Class 2.3  
Sub-Risk 5.1  
UN No. 1017  
Packaging Group : -  
Quantity Involved : 800 litres  
Quantity Spilled : 50 millilitres

### SCENARIO :

During the changeover of supply from a 920 kilogram chlorine drum at a swimming pool a small amount of liquid chlorine was released.

Investigations indicated that the most likely cause of the release was that the heater on the chlorinator was not activated. When the chlorinator was detached from the drum, liquid chlorine in the trap of the heater was released.

Two operators wearing self contained breathing apparatus were present during the changeover operation. One of the operators was sprayed with chlorine and jumped into the nearby swimming pool to decontaminate his clothing. No injuries were sustained as a result of the release.

The Division ensured that a detailed review of the incident was conducted resulting in the implementation of improved procedures, emergency response measures and the installation of a safety shower.

**DGAS** : W6/94 **File No.** : 159/94

## DANGEROUS GOODS STORAGE ACCIDENT REPORT

**Date** : 20 January 1994                      **Time** : 0730 hrs  
**Location** : Lake Kununurra  
                    KUNUNURRA  
**Dangerous Goods Involved** : DIESEL FUEL  
                    Class    3  
                    Sub-Risk    -  
                    UN No.    -  
                    Packaging Group : -  
                    Quantity Involved : 41600 litres  
                    Quantity Spilled : 3120 litres

### SCENARIO :

Diesel fuel was released into Lake Kununurra from a pump station fuel storage tank when the day tank overflowed.

During the filling of pump station day tanks from a main storage tank an operator failed to completely close the isolation valve on the main tank causing the day tank to overflow into the surrounding bund.

The fuel was contained and cleaned up by personnel from the Water Authority and the Department of Marine and Harbours.

Engineering controls, improved operator procedures and increased operator training have been implemented to prevent a recurrence.

**DGAS** :        **W1/94**                      **File No.** :        **10/94**



## **DANGEROUS GOODS STORAGE ACCIDENT REPORT**

**Date** : 23 February 1994      **Time** : 1952 hrs

**Location** : Titanium Dioxide Plant  
KWINANA

**Dangerous Goods** : TITANIUM TETRACHLORIDE

**Involved** : Class                      8  
Sub-Risk                              -  
UN No.                                1838  
Packaging Group : II  
Quantity Involved : N/A  
Quantity Spilled : 2 kg

### **SCENARIO :**

A heat exchanger was identified as operating inefficiently and was purged in accordance with site procedure prior to removal for cleaning. During the removal of a spool associated with the equipment there was a spill of titanium tetrachloride. Foam was immediately applied to the spill and the site emergency response procedure followed.

Subsequent investigation revealed that the correct maintenance procedures had been followed, however due to a variation of the start-up procedure associated with this portion of plant, an unusually high amount of scale developed in the heat exchanger. Engineering and operational controls are being implemented to minimise the possibility of recurrence.

**DGAS** :      **W15/94**                      **File No.** :      **165/94**

## DA NGER OUS GOODS STOR AGE ACC IDENT REP ORT

**Date** : 23 March 1994                      **Time** : 1830 hrs  
**Location** : Gilmore Avenue  
                    KWINANA  
**Dangerous Goods** : CHLORINE  
**Involved** : Class                              2.3  
                    Sub-Risk                        5.1  
                    UN No.                                    1017  
                    Packaging Group : -  
                    Quantity Involved : 136 kg  
                    Quantity Spilled : 5 kg

### SCENARIO :

While changing chlorine cylinders on a public swimming pool chlorinator a gas fitting was damaged.

The operator attempted to repair the broken fitting and was sprayed with chlorine gas. The operator was not wearing self contained breathing apparatus (SCBA) at the time of the incident.

The operator was a qualified Pool Manager but had not attended site induction training and was instructed not to effect a change-over unless accompanied by someone who was experienced in the change-over process. The operator was accompanied at the commencement of the change-over, however, during the operation the accompanying officer was called away to attend to other duties.

This incident, being the second at the site within three months, highlighted the need for improved training. Improved procedures and equipment alone are not sufficient to prevent accidents.

**DGAS** :        **W3/94**                      **File No.** :        **76/94**



## DANGEROUS GOODS STORAGE ACCIDENT REPORT

**Date** : 30 March 1994                      **Time** : 0430 hrs

**Location** : Titanium Dioxide Plant  
KEMERTON

**Dangerous Goods** : TITANIUM TETRACHLORIDE

**Involved** : Class                              8  
Sub-Risk                                        -  
UN No.    1838  
Packaging Group : II  
Quantity Involved : 1000 kg  
Quantity Spilled : 299 kg

### SCENARIO :

A sequence of public utility power supply interruptions resulted in the mixing, in a storage tank, of process fluids normally excluded from contact. During clean out activity of the tank a discharge nozzle on the tank failed due to incompatibility with the products of reaction. Subsequent rapid neutralisation caused the fume extraction system to overload and a highly visible acid plume was generated.

As a result of this incident the company has vigorously reviewed the equipment that failed and areas of plant that have the potential for a similar incompatible interaction. Instrumentation has been installed to facilitate the detection and to minimise the potential for recurrence.

**DGAS** :        **W16/9**                      **File No.** :    **205/93**

## DANGEROUS GOODS STORAGE ACCIDENT REPORT

**Date** : 06 April 1994                      **Time** : 2320 hrs

**Location** : Kwinana Beach Road  
KWINANA

**Dangerous Goods** LIQUEFIED ANHYDROUS AMMONIA

**Involved** : Class                      2.3  
Sub-Risk                      8  
UN No.                      1005  
Packaging Group : -  
Quantity Involved : N/A  
Quantity Spilled : 1 litre

**Dangerous Goods** PHOSPHORIC ACID

**Involved** : Class                      8  
Sub-Risk                      -  
UN No.                      1805  
Packaging Group : III  
Quantity Present : N/A  
Quantity Involved : 100 litres

### SCENARIO :

A dump truck, with its tray raised, collided with an overhead pipeline gantry. The gantry broke free from its supports and collapsed, injuring the driver.

100 litres of phosphoric acid and 1 litre of ammonia leaked from the respective pipelines before they could be isolated.

The phosphoric acid was diluted with water and washed into a containment pond.

To prevent the recurrence of such an incident, the pipeline gantry was raised.

**DGAS** :      **W4/94**                      **File No.** :      **85/94**

## **DANGEROUS GOODS STORAGE ACCIDENT REPORT**

**Date** : 03 June 1994 **Time** : 1700 hrs  
**Location** : Bracks Street  
NORTH FREMANTLE  
**Dangerous Goods Involved** : PETROL  
Class : 3  
Sub-Risk : -  
UN No. : 1203  
Packaging Group : II  
Quantity Involved : 800000 litres  
Quantity Spilled : 100 litres

### **SCENARIO :**

Evidence of substandard work by tank maintenance contractors led to the inspection of several 800 kilolitre tanks at a fuel depot. Initial findings indicated that cracks had developed in the floor weld seams of one tank. These were repaired and then tested.

After returning the tank to service for one week, product stains appeared in surrounding ground. The tank was immediately drained and cleaned. Contaminated soil was removed and disposed of at an approved site.

Further inspection and tests of the tank floor failed to identify the source of the leak so a decision was made to install a new tank floor. Testing and inspection results showed no further leakage and the tank was returned to service.

**DGAS** : **W12/94** **File No.** : **211/94**



## DANGEROUS GOODS STORAGE ACCIDENT REPORT

**Date** : 20 July 1994                      **Time** : 2215 hrs

**Location** : Liquefied Natural Gas Plant  
DAMPIER

**Dangerous Goods** : METHANE

**Involved** : Class                      2.1  
                    Sub-Risk                      -  
                    UN No.                      1971  
                    Packaging Group : -  
                    Quantity Involved : N/A  
                    Quantity Spilled : 6000 kg

**Dangerous Goods** : LIQUEFIED NATURAL GAS

**Involved** : Class                      2.1  
                    Sub-Risk                      -  
                    UN No.                      1972  
                    Packaging Group : -  
                    Quantity Present : N/A  
                    Quantity Involved : 2000 kg

### SCENARIO :

An outboard suction valve cover on a compressor blew off while the compressor was being loaded resulting in the release of approximately six tonnes of gas and two tonnes of condensate through the vacant valve enclosure.

The escaped gas and condensate was dispersed and did not ignite. A detailed investigation was conducted of the events leading up to the incident and the site response after the incident. It concluded that the failure was due to loss of pre-stress in the bolts securing the valve cover.

As a result of the investigation, recommendations have been implemented to prevent recurrence.

**DGAS** :      **W17/94**                      **File No.** :      **28/91**



## DA NGER OUS GOODS STOR AGE ACC IDENT REP ORT

**Date** : 19 August 1994 **Time** : 0800 hrs  
**Location** : Magnet Road  
CANNING VALE  
**Dangerous Goods Involved** : TOLUENE DIISOCYANATE  
Class 6.1  
Sub-Risk -  
UN No. 2078  
Packaging Group : II  
Quantity Involved : 20000 kg  
Quantity Spilled : 100 kg

### SCENARIO :

An isotainer containing toluene diisocyanate (TDI) which arrived on a ship from Germany was loaded onto a trailer for transport and delivery.

During preparations to discharge the TDI it was noticed that the temperature gauge was missing from the isotainer.

The fittings supplied by the transport company were in poor condition having worn shafts, bearings and valve seats and were incompatible with those on the receiving tank. The transport company supplied additional fittings for the discharge outlet and the vapour recovery vent.

During transfer a sound was heard as pressure equalised in the lines and TDI was seen leaking from welds in the vapour line. Upon entering the TDI tank room, employees found that approximately 100 kilograms of TDI had spilt onto the floor.

An investigation found that the spill had resulted from nitrogen purge gas in the isotainer forcing TDI through piping which bursted a silica gel filter.

Follow up action has ensured that appropriate fittings are provided for future deliveries.

**DGAS** : W10/94 **File No.** : 195/94

## **DANGEROUS GOODS STORAGE ACCIDENT REPORT**

**Date** : 26 September 1994      **Time** : 2130 hrs

**Location** : Baile Road  
CANNING VALE

**Dangerous Goods** : LIQUEFIED ANHYDROUS AMMONIA

**Involved** : Class                      2.3

Sub-Risk                      8

UN No.                      1005

Packaging Group : -

Quantity Involved : 54000 litres

Quantity Spilled : 70 litres

### **SCENARIO :**

During routine maintenance on a beer chiller, liquid ammonia leaked into a pump down compressor. The increased pressure produced when the liquid entered the compressor blew the compressor head gasket, allowing ammonia to leak out into the atmosphere.

Emergency services personnel attended the scene and assisted site personnel in controlling the leak.

Additional engineering controls and operator training were implemented to prevent a recurrence.

**DGAS** :      **W8/94**                      **File No.** :      **185/94**

## DANGEROUS GOODS STORAGE ACCIDENT REPORT

**Date** : 09 October 1994      **Time** : 1030 hrs

**Location** : Baden Street  
OSBORNE PARK

**Dangerous Goods** : LIQUEFIED ANHYDROUS AMMONIA

**Involved** : Class                      2.3  
                 Sub-Risk                      8  
                 UN No.                              1005  
                 Packaging Group : -  
                 Quantity Involved : 3000 kg  
                 Quantity Spilled : 60 kg

### SCENARIO :

A section of refrigeration pipework carrying anhydrous ammonia was being modified by insertion of another ammonia take-off line. The section was isolated from the main refrigeration circuit with valves, however one of the valves failed prior to completion of the modifications and released ammonia into the building.

The installation of the isolation valve at the take-off point was completed and the leak was contained.

The Division is pursuing with the site operator, the implementation of improved procedures for future maintenance operations.

**DGAS** :      **W7/94**                      **File No.** :      **163/94**



## DAINGEROUS GOODS STORAGE ACCIDENT REPORT

**Date** : 05 November 1994      **Time** : 1300 hrs

**Location** : Stockdale Road  
O'CONNOR

**Dangerous Goods** : POTASSIUM AMYL XANTHATE

**Involved** : Class                    4.3  
                  Sub-Risk                    6.1  
                  UN No.                            3134  
                  Packaging Group : II  
                  Quantity Involved : 56000 kg  
                  Quantity Spilled : 2100 kg

### SCENARIO :

Two intermediate bulk containers (IBC) of Potassium Amyl Xanthate (PAX) were found to be smouldering during testing that was being carried out on 80 such IBCs. The testing was being done to determine stability of the PAX following a fire involving the substance at its manufacturing plant in South Africa.

The 80 IBCs were packed in four freight containers and were being shipped by sea from South Africa to Papua New Guinea. Following the issue of a product alert by the manufacturer, the shipper examined the product and unloaded it at Fremantle, the first port of call, for further testing.

The freight containers were taken to a transport yard in O'Connor to facilitate product testing. The two smouldering IBCs, and another which was subsequently tested and found to be unstable, were placed in an empty freight container and isolated pending a decision on appropriate disposal action.

A 500 metre exclusion zone was established, requiring the evacuation of approximately 100 homes in the downwind direction.

As recovery of the product was not practical in this instance, it was decided the safest option was to allow the product to burn under controlled conditions.

**DGAS** :      **W11/94**              **File No.** :      **202/94**





## DANGEROUS GOODS STORAGE ACCIDENT REPORT

**Date** : 15 December 1994      **Time** : 2000 hrs

**Location** : Kwinana Beach Road  
KWINANA

**Dangerous Goods** : PHOSPHORIC ACID

**Involved** : Class                      8  
                 Sub-Risk                      -  
                 UN No.                              1805  
                 Packaging Group : III  
                 Quantity Involved : N/A  
                 Quantity Spilled : 3000 litres

### SCENARIO :

During the draining of a phosphoric acid import line, a spool piece was removed prematurely allowing acid to spill out into a nearby concrete drain. The drain quickly overflowed causing acid to spill into the surrounding area.

The crew performing the drainage operations fitted blanking flanges to seal the line and avoid further spillage. Approximately 3000 litres of phosphoric was spilt onto the wharf area and was diluted with water.

The diluted product was pumped back into storage and the acid residue was neutralised with lime and stored for later use in fertiliser products.

**DGAS** :      **W20/94**                      **File No.** :      **22/95**



## DAINGEROUS GOODS STORAGE ACCIDENT REPORT

**Date** : 22 December 1994      **Time** : 0645 hrs

**Location** : Kwinana Beach Road  
KWINANA

**Dangerous Goods** : PHOSPHORIC ACID

**Involved** : Class                      8

Sub-Risk                                -

UN No                                    1805

Packaging Group : III

Quantity Involved : 10,000 tonnes

Quantity Spilled : 30 tonnes

### SCENARIO :

A gasket, on the outlet flange of a supply pump, failed during the transfer of phosphoric acid from a storage facility to granulating plant, allowing acid to spill out into a bunded area.

An employee at the plant noticed the spill in the early hours of the morning and contacted the shift supervisor who in turn arranged for the plant to be shut down.

The delivery pump was stopped in an attempt to stem the flow of acid, however the acid continued to leak from the flange due to the head from the storage tank.

The shift emergency response unit was mobilised and wearing full protective clothing, proceeded to isolate the flange from the tank.

The majority of the spill was contained within the bunded area and was pumped back into the storage tank. A small amount of acid which was sprayed outside of the bunded area was neutralised with lime and diluted with water.

The gasket was replaced and the plant returned to normal operation.

**DGAS** :      **W13/94**                      **File No.** :      **23/9**

## **DANGEROUS GOODS STORAGE ACCIDENT REPORT**

**Date** : 24 December 1994      **Time** : 1500 hrs

**Location** : Hay Street  
SUBIACO

**Dangerous Goods** : COMPRESSED OXYGEN

**Involved** : Class                      2.2

Sub-Risk                      5.1

UN No.                      1072

Packaging Group : -

Quantity Involved : 6150 litres

Quantity Spilled : 800 litres

### **SCENARIO :**

A compressed oxygen cylinder which was part of a manifolded package split open causing an uncontrolled release of product.

The pressure release damaged the frame of the container allowing one cylinder to escape. This cylinder was thrown across the yard striking the ground approximately eight metres away. The integrity of the manifold was lost, venting the contents of the other cylinders. A passing driver heard the noise and contacted the police.

Emergency services personnel and company staff cooled the cylinders for approximately 10 minutes which allowed the area to be cleaned up and secured by staff.

Investigations are ongoing to determine to cause of failure.

**DGAS** :      **W14/94**      **File No.** :      **227/94**

# **DANGEROUS GOODS TRANSPORT ACCIDENT REPORT**

## **INTRODUCTION**

Twenty two transport accidents were recorded in 1994, which is not significantly higher than the nine year average of approximately twenty. One transport accident resulted in a fatality, however, the dangerous goods transported were incidental to the traffic accident and therefore the accident was not recorded.

One accident involved the transport of solid sodium cyanide, however, in this case the transport container was not extensively damaged and there was no spillage of product from the intermediate bulk containers within. In general, cyanide continues to be transported safely to gold mining centres throughout Western Australia.

Only three accidents involved petroleum fuel as compared to eight in 1993. Two of these incidents were of particular concern and involved incorrect transfer procedures leading to the overfilling of receival tanks. Drivers should be aware that they can expect to be prosecuted for incidents where standard procedures are not followed and spills result.

Another area of concern is incidents which involved inadequate stowage or restraint of dangerous goods during transport. These incidents accounted for almost a third of the recorded incidents. Accidents of this kind are readily preventable and where breaches of the Australian Dangerous Goods Code can be identified, prosecution of the offender is pursued.

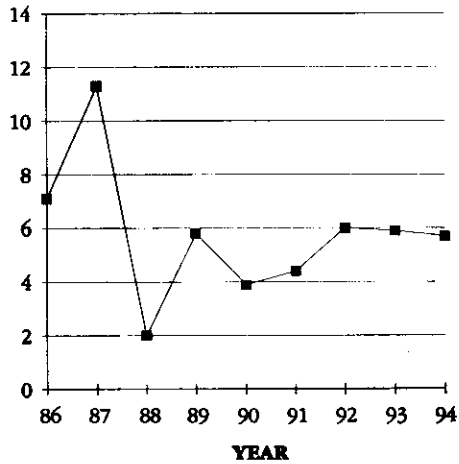
Three accidents involved the failure of bulk container fittings, two of which led to operators suffering minor injuries. This highlights the need for owners of dangerous goods containers to regularly service and test containers in line with the requirements of the Australian Dangerous Goods Code. The Division will pay particular attention to test dates and maintenance schedules of bulk containers inspected during 1995. Containers which do not meet these requirements will not be permitted to be used for the carrying of dangerous goods.

Accidents in 1994 were distributed evenly throughout the year which indicates that seasonal factors may not play a significant part in dangerous goods transport accident statistics as was believed in previous years.

The Divisional newsletter 'Explosay' continues to highlight particular hazards associated with the transport of dangerous goods and offers information and advice to help industry avoid accidents.

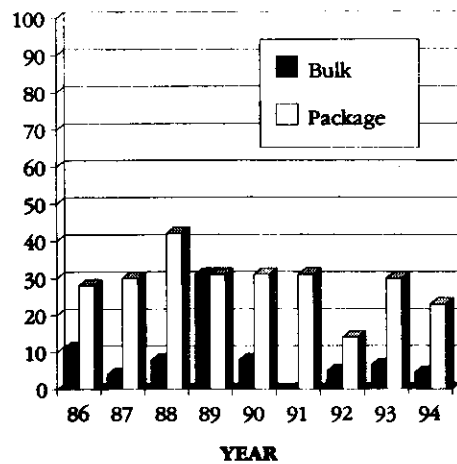
## SELECTED ROAD TRANSPORT ACCIDENT STATISTICS

**NUMBER OF ACCIDENTS PER 1000 LICENSED VEHICLES  
(BULK ONLY)**



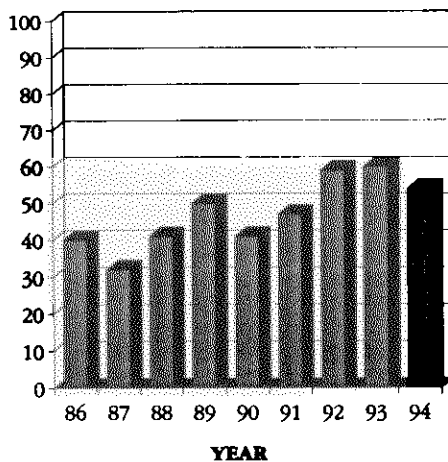
The 1994 value is slightly lower than that experienced in previous years, and it is comparable with the overall average of approximately 6 accidents per 1000 licenced vehicles.

**NON COMPLYING VEHICLES IN ACCIDENTS  
BULK / PACKAGE**



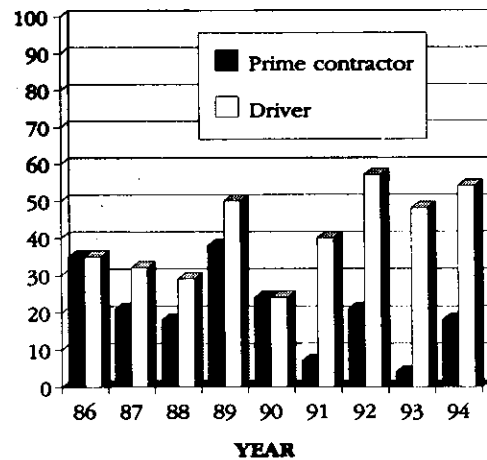
The percentage of non-complying packaged and bulk dangerous goods vehicles involved in accidents 1994 fell below their respective averages as observed over the nine year period. Inadequate restraint and improper stowage of packaged dangerous goods continues to contribute significantly to these statistics.

**PERCENTAGE OF ACCIDENTS CAUSED BY  
OPERATOR DEVIATION FROM STANDARD  
PROCEDURES**



Although the percentage of accidents caused by operator deviation from standard procedures has decreased slightly from previous years, the percentage continues to be high. The implementation of accreditation for training providers and the extension of course duration for drivers should address many of these problems.

**DRIVER AND PRIME CONTRACTOR CONTRIBUTION  
TO OPERATOR DEVIATION CAUSED ACCIDENTS**



The driver contribution to dangerous goods accidents is reflected in the high number of prosecutions of drivers over recent years. A survey of drivers will be conducted to identify shortfalls in driver knowledge which may have contributed to accidents caused by operator deviation from standard procedures.

# DAINGEROUS GOODS TRANSPORT ACCIDENT SUMMARY REPORT

## For Year 1994

	Date	Location	Goods	Class	Comments
W1/94	24/1/94	LEEMING	AMMONIUM NITRATE	5.1	Inadequately restrained intermediate bulk containers of ammonium nitrate fell from a cornering vehicle and broke open.
W2/94	31/1/94	KALGOORLIE	OXYGEN	2.2	Inadequately restrained cylinders of medical oxygen fell from a cornering vehicle and the cylinder contents were released through a damaged valve.
W3/94	10/2/94	NEWMAN	SULPHURIC ACID	8	Pressure build up in a transport tank resulted in a plume of acid showering a company employee at a water treatment plant during unloading operations.
W4/94	17/2/94	NEWMAN	SULPHURIC ACID	8	Pressure build up in a transport tank resulted in a plume of acid showering the tanker driver during discharge operations.
W5/94	6/3/94	NORSEMAN	SODIUM FLUOROSILICATE	8	A head on collision between a road train and a small sedan resulted in an extensive spill of chemicals and the death of the driver of the sedan.
W10/94	18/5/94	QUAIRADING	TRIAZINE PESTICIDES	6.1	Packaged pesticides fell onto the roadway from a vehicle involved in a traffic accident.
W7/94	29/5/94	LEINSTER	LIQUID AMMONIUM NITRATE	5.1	A tyre fire which occurred on the lead trailer of a triple road train threatened to engulf an isotainer of liquid ammonium nitrate which formed part of the load.
W8/94	21/6/94	COOLGARDIE	AMMONIUM NITRATE	5.1	A vehicle transporting intermediate bulk containers of ammonium nitrate rolled over and lost its load while swerving to avoid a kangaroo.
W9/94	3/7/94	KALGOORLIE	ORGANO-PHOSPHOROUS PESTICIDES	6.1	A low toxicity herbicide was found to be leaking from drums in a rail wagon at the West Kalgoorlie Freight Yards.
W13/94	9/7/94	KATANNING	PETROLEUM	3	An aboveground tank was overfilled with unleaded petrol allowing approximately 1000 litres to spill into the surrounding bund.
W11/94	19/7/94	BUNBURY	METHANOL	3	An overflow of methanol occurred from a tanker when the operator left the vehicle unattended during filling operations.

## DANGEROUS GOODS TRANSPORT ACCIDENT SUMMARY REPORT (CONTINUED)

	Date	Location	Goods	Class	Comments
W12/94	4/8/94	EAST KALGOORLIE	METHYL ISOBUTYL KETONE	3	A leak developed in a drum containing methyl isobutyl ketone while in transit inside a rail wagon.
W15/94	3/9/94	WEST KALGOORLIE	RESIN SOLUTION, FLAMMABLE	3	Incorrect stacking of drums in a rail wagon resulted in a spill of resin solution. The drums rubbed together while in transit which created a leak.
W14/94	5/9/94	BENTLEY	ORGANO- CHLORINE PESTICIDES	6.1	Drums of pesticide were punctured by general freight which moved during transport. Product was spilt throughout the load which also comprised foodstuffs.
W16/94	19/9/94	KELLERBERRIN	RESIN SOLUTION	3	A road train carrying various dangerous goods rolled over in the main street of a country town. Product was spilt necessitating the evacuation from a number of homes.
W17/94	28/9/94	ARGYLE	HYDROCHLORIC ACID	8	The rear trailer of a triple road train overturned while travelling along a mine access road. Approximately 1500 litres of acid was spilt.
W24/94	2/10/94	BALLADONIA	N-PROPYL ACETATE	3	An improperly stowed load of drums of n-propyl acetate was damaged in transit. One of the drums developing a leak while east of Norseman.
W19/94	5/10/94	NEWBURN	HYDROCHLORIC ACID	8	A pump used to transfer hydrochloric acid showered an operator with product when a seal on the side of the pump housing failed.
W21/94	9/11/94	BAYSWATER	CHLORINE	2.3	Several cylinders of chlorine fell from a vehicle due to the driver's failure to adequately secure the load.
W25/94	17/11/94	MARDELLA	PETROLEUM FUEL	3	A receipt tank being filled with petroleum fuel overflowed due to the operator's failure to accurately determine the available ullage.
W20/94	23/11/94	FREMANTLE	STYRENE MONOMER	3	An isotainer transporting styrene monomer was found to be leaking from a loose filler cap on arrival at the Port of Fremantle on a ship from Melbourne.
W22/94	9/12/94	CHITTERING	SODIUM CYANIDE	6.1	The driver of a vehicle transporting bulk sodium cyanide lost control while negotiating a bend. Although a freight container was significantly damaged, no product was lost.

## DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

**Date** : 24 January 1994                      **Time** : 1010 hrs

**Location** : Cnr Farrington Road and Kwinana Freeway  
LEEMING

**Dangerous Goods** : AMMONIUM NITRATE

**Involved** : Class                      5.1  
                    Sub-Risk                      -  
                    UN No.                      1942  
                    Packaging Group : III  
                    Quantity Involved : 24000 kg  
                    Quantity Spilled : 2400 kg

### SCENARIO :

Two intermediate bulk containers (IBC) containing ammonium nitrate fell from a semi trailer while negotiating a left hand bend onto the Kwinana Freeway.

The load of ammonium nitrate was found to have been inadequately restrained with ropes which were used to hold the gates in position. The gates shifted under the weight of the load and one of the side gates collapsed allowing two of the IBCs to fall from the vehicle.

Both of the IBCs broke open on impact with the road surface spilling product along a 20 metre stretch of roadway. The Police and Fire Brigade were contacted and attended the scene. Spilt product was shovelled into recovery bags and returned to the manufacturer for salvage. The road was re-opened to traffic some two hours after the initial spill was reported.

**DGAT** :      **W1/94**                      **File No.** :      **17/94**

## **DANGEROUS GOODS TRANSPORT ACCIDENT REPORT**

**Date** : 31 January 1994                      **Time** : 1620 hrs

**Location** : Vivian St  
KALGOORLIE

**Dangerous Goods** : OXYGEN

**Involved** : Class                                      2.2

Sub-Risk    5.1

UN No.    1072

Packaging Group : -

Quantity Involved : 100 litres

Quantity Spilled : 50 litres

### **SCENARIO :**

A cage containing cylinders of medical oxygen fell from a vehicle while it negotiated a bend. Two of the cylinders were extensively damaged as a result of the impact and immediately vented their contents to the atmosphere. The two remaining cylinders were damaged to a lesser extent and were vented to the atmosphere by the driver as a precaution.

The load had been inadequately secured to the vehicle and one of the vehicle's side gates was not in position. The driver was later fined by Police for failing to adequately secure the load.

**DGAT** :        **W2/94**                      **File No.** :        **42/94**



# DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

**Date** : 10 February 1994      **Time** : 1500 hrs  
**Location** : Minesite  
              NEWMAN  
**Dangerous Goods Involved** : SULPHURIC ACID  
                  Class                   8  
                  Sub-Risk                -  
                  UN No.                 1830  
                  Packaging Group : II  
                  Quantity Involved : 14000 litres  
                  Quantity Spilled : 10 litres

## SCENARIO :

A tanker transporting sulphuric acid arrived at a water treatment plant and the driver prepared to discharge the load, aided by a company employee who operated the plant. On opening the camlock fitting at the top of the tank, a plume of sulphuric acid issued into the air, dousing the protective clothing worn by the plant operator.

The affected employee proceeded to the safety shower and washed off his contaminated clothing. The truck and tanker were detained at the mine site pending an investigation into the cause of the accident, which was later identified as a faulty release valve.

**DGAT** :      **W3/94**                    **File No.** :      **43/94**

# DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

**Date** : 06 March 1994                      **Time** : 0730 hrs

**Location** : Coolgardie - Esperance Highway  
NORSEMAN

**Dangerous Goods**      SODIUM FLUOROSILICATE

**Involved** :      Class                      8  
                    Sub-Risk                      -  
                    UN No.                      2674  
                    Packaging Group      : III  
                    Quantity Involved    : 7000 kg  
                    Quantity Spilled     : 7000 kg

**Dangerous Goods**      RESIN SOLUTION

**Involved** :      Class                      3  
                    Sub-Risk                      -  
                    UN No.                      1866  
                    Packaging Group      : III  
                    Quantity Present     : 840 kg  
                    Quantity Involved    : 840 kg

DICHLOROISOCYANURIC ACID

**Dangerous Goods**      Class                      5.1  
**Involved** :      Sub-Risk                      -  
                    UN No.                      2465  
                    Packaging Group      : II  
                    Quantity Present     : 75 kg  
                    Quantity Involved    : 75 kg

## SCENARIO :

A road train transporting a variety of dangerous goods collided with an oncoming sedan. The driver of the sedan was killed and the driver of the prime mover was taken by The Flying Doctor Service to hospital. An extensive spill of chemicals occurred as a result of the collision.

The highway was closed for several hours while the clean up of spilt chemicals was in progress. Eventually it was agreed to bury the remaining chemicals at a site adjacent to the accident but at a distance from the road reserve.

**DGAT** :      W5/94                      **File No.** :      45/94



# **DANGEROUS GOODS TRANSPORT ACCIDENT REPORT**

**Date** : 29 May 1994                      **Time** : 0030 hrs

**Location** : Meekatharra Highway, 80 km North of  
LEINSTER

**Dangerous Goods** : LIQUID AMMONIUM NITRATE

**Involved** : Class                      5.1  
                    Sub-Risk                      -  
                    UN No.                      3139  
                    Packaging Group : III  
                    Quantity Involved : 70000 kg  
                    Quantity Spilled : 20000 kg

## **SCENARIO :**

A road train travelling north along the Meekatharra Highway caught fire approximately 80 kilometres north of Leinster. The road train consisted of two trailers carrying general freight and one trailer carrying an iso-container of an oxidising liquid.

The driver attempted to extinguish the fire, which was thought to have originated in the front axle of the lead trailer, but was unsuccessful. The fire was eventually extinguished by a water cart from a nearby mine site.

There was no loss of product and no injuries were sustained.

**DGAT** :      **W7/94**                      **File No.** :      **110/94**

## DAINGEROUS GOODS TRANSPORT ACCIDENT REPORT

**Date** : 21 June 1994 **Time** : 2350 hrs

**Location** : Great Eastern Highway, 75 km West of  
COOLGARDIE

**Dangerous Goods** : AMMONIUM NITRATE

**Involved** : Class 5.1

Sub-Risk -

UN No. 1942

Packaging Group : III

Quantity Involved : 20000 kg

Quantity Spilled : 20000 kg

### SCENARIO :

An eastbound road train transporting intermediate bulk containers (IBC) of ammonium nitrate rolled over as it swerved to avoid a kangaroo in poor weather conditions. The rear trailer slid onto the soft gravel verge and rolled over onto its side, losing the entire load.

The trailers came to rest on the roadway obstructing traffic, so the driver disconnected the prime mover from the trailers and pushed the obstructing trailer to the edge of the road.

The Police and Fire Brigade attended the scene and assisted with the clean up and salvage of damaged IBCs. Contaminated product was taken away for cleaning, separation or disposal as required.

No one was injured as a result of the rollover.

**DGAT** : **W8/94** **File No.** : **111/94**

## DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

**Date** : 03 July 1994                      **Time** : 1345 hrs

**Location** : West Kalgoorlie Road  
KALGOORLIE

**Dangerous Goods Involved** : ORGANOPHOSPHOROUS PESTICIDES

Class                      6.1  
Sub-Risk                      -  
UN No.                      3018  
Packaging Group : III  
Quantity Involved : 2500 litres  
Quantity Spilled : 260 litres

**Dangerous Goods Involved** : PAINTS

Class                      3  
Sub-Risk                      -  
UN No.                      1263  
Packaging Group : II  
Quantity Present : 600 litres  
Quantity Involved : 0 litres

**Dangerous Goods Involved** : ALKYLAMINES N.O.S.

Class                      8  
Sub-Risk                      -  
UN No.                      2735  
Packaging Group : II  
Quantity Present : 450 litres  
Quantity Involved : 0 litres

### SCENARIO :

A railways officer at the West Kalgoorlie Marshalling yard noticed liquid leaking from a wagon of a westbound freight train as it arrived. The officer notified the operations centre upon noticing that the rail wagon was placarded with a mixed load Class label. The documentation for the load indicated that there was dangerous goods of Classes 3, 6 and 8 on board. The Police were notified and cordoned off the area while Fire Brigade personnel investigated the leaking container while wearing breathing apparatus and full protective clothing.

Several hours after the incident was reported, a leaking container was located and found not to be dangerous. During subsequent clean up operations the Fire Brigade found that several drums of low toxicity herbicide were also leaking. The spill and contaminated sections of the rail wagon were neutralised with lime and the site was declared safe.

Investigations into the incident indicated that the leakages were caused by inadequate stowage of the packages.

**DGAT** :      **W9/94**                      **File No.** :      **116/94**



## DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

**Date** : 19 July 1994                      **Time** : 1400 hrs  
**Location** : Bunbury Wharf  
              BUNBURY  
**Dangerous Goods**    METHANOL  
**Involved** : Class                            3  
                  Sub-Risk                      6.1  
                  UN No.                        1230  
                  Packaging Group : II  
                  Quantity Involved : 27000 litres  
                  Quantity Spilled : 500 litres

### SCENARIO :

The driver of a tanker who was in the process of loading methanol left the vehicle unattended while he used nearby amenities. When the driver returned he noticed that the tank was overflowing.

Methanol escaped through vents at the top of the tanker and flowed down through drainage hoses in the rollover coaming onto the wharf. The methanol entered nearby drains and flowed into the harbour.

The driver manually closed the supply valve and proceeded to dilute and wash away the spill using a hydrant and garden hose.

Investigations into the incident showed that the failure of an overfill protection valve contributed to the incident.

**DGAT** :    **W11/94**                      **File No.** :    **124/94**









## **DANGEROUS GOODS TRANSPORT ACCIDENT REPORT**

**Date** : 19 September 1994      **Time** : 0200 hrs

**Location** : Massingham Street  
KELLERBERRIN

**Dangerous Goods** : RESIN SOLUTION

**Involved** : Class                    3  
                  Sub-Risk                 -  
                  UN No.                         1866  
                  Packaging Group : III  
                  Quantity Involved : 660 litres  
                  Quantity Spilled : 330 litres

**Dangerous Goods** : BIPYRIDILIUM PESTICIDES

**Involved** : Class                    6.1  
                  Sub-Risk                 -  
                  UN No.                         3016  
                  Packaging Group : III  
                  Quantity Present : 5140 litres  
                  Quantity Involved : 80 litres

### **SCENARIO :**

A westbound road train carrying general freight and a variety of dangerous goods was travelling along the main street of Kellerberrin when it clipped two power poles before crashing into a house in the early hours of the morning.

The prime mover and the lead trailer rolled over allowing small quantities of herbicide and flammable liquids to be spilled. The rear trailer remained upright and did not sustain serious damage.

Sixty five residents were evacuated to a local sports pavilion while clean up operations were in progress. The spilled products were recovered and loaded into 200 litre drums and disposal of the goods was arranged.

A clerical error in the recording of the United Nations number of the resin solution complicated the emergency response for the incident, highlighting the need for consignors and prime contractors to ensure that shipping documents are accurately filled out before transporting dangerous goods.

No one was seriously injured in the incident, with the driver receiving only minor abrasions.

**DGAT** :      **W16/94**                    **File No.** :      **167/94**

## DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

**Date** : 28 September 1994      **Time** : 1600 hrs

**Location** : Argyle access road  
ARGYLE

**Dangerous Goods** : HYDROCHLORIC ACID

**Involved** : Class                      8

Sub-Risk                              -

UN No.                                1789

Packaging Group : II

Quantity Involved : 3500 litres

Quantity Spilled : 1500 litres

### SCENARIO :

The driver of a road train transporting a bulk container of hydrochloric acid slowed down and moved to the side of the road to avoid oncoming road trains. Immediately after the oncoming vehicles had passed the road verge gave way and the rear trailer slid down into the table drain.

The driver accelerated and attempted to centralise his vehicle on the road but the rear trailer rolled over losing its load in the table drain.

The container of hydrochloric acid was damaged on impact and began to leak product. Emergency services personnel were contacted and attended the scene to assist with the clean up operations. A front end loader was obtained from a nearby mine site and was used to construct an earth bund around the spilled acid. Lime was then used to neutralise the estimated 1500 litres of spilt acid.

The road was re-opened some 16 hours after the incident occurred.

**DGAT** :      **W17/94**                      **File No.** :      **169/94**

# DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

**Date** : 02 October 1994 **Time** : 1900 hrs

**Location** : Balladonia-Norseman Road  
BALLADONIA

**Dangerous Goods Involved** : N-PROPYL ACETATE

Class : 3

Sub-Risk : -

UN No. : 1276

Packaging Group : II

Quantity Involved : 2400 litres

Quantity Spilled : 200 litres

## SCENARIO :

The driver of a vehicle transporting twelve 200 litre drums of n-propyl acetate noticed a leak emanating from one of the drums while refuelling at Balladonia.

The driver of the vehicle contacted the Fire Brigade Operations Centre and was advised to drive to Norseman where the emergency services could attend to the problem.

The vehicle was met by Norseman Police and Fire Brigade in a parking bay 16 kilometres east of Norseman where the vehicle was isolated. Fire Brigade personnel found that the drums had been inadequately stowed with heavy machinery parts on top of the drums and no packing or strapping had been placed in between or around the drums to prevent them from moving and rubbing while in transit.

While investigation revealed that only one drum was leaking, all of the other drums showed signs of significant wear due to inadequate stowage of the load.

**DGAT** : W24/94 **File No.** : 228/94

## **DANGEROUS GOODS TRANSPORT ACCIDENT REPORT**

**Date** : 05 October 1994                      **Time** : 1400 hrs  
**Location** : Horrie Miller Drive  
                    NEWBURN  
**Dangerous Goods** : HYDROCHLORIC ACID  
**Involved** : Class                                      8  
                    Sub-Risk                                      -  
                    UN No.    1789  
                    Packaging Group : II  
                    Quantity Involved : 2000 litres  
                    Quantity Spilled : 20 litres

### **SCENARIO :**

An operator who was transferring hydrochloric acid from an intermediate bulk container (IBC) on a vehicle to a storage tank, noticed a leak from the side of the pump housing on a newly installed pump.

The operator attempted to tighten what appeared to be a loose seal which caused the seal to fail showering him with acid.

The pump was shut down and the valve on the IBC was turned off. The operator who was contaminated with product used a nearby safety shower to wash off the acid, sustaining no serious injury.

The incident was believed to be caused by the fittings on the new pump being incompatible with the product being transferred.

**DGAT** :        **W19/94**                      **File No.** :        **196/94**

## **DANGEROUS GOODS TRANSPORT ACCIDENT REPORT**

**Date** : 09 November 1994      **Time** : 1730 hrs

**Location** : Tonkin Highway on-ramp  
BAYSWATER

**Dangerous Goods** : CHLORINE

**Involved** : Class                      2.3

Sub-Risk                      5.1

UN No.                      1017

Packaging Group : -

Quantity Involved : 55 litres

Quantity Spilled : 0 litres

### **SCENARIO :**

Several cylinders of chlorine gas fell from a vehicle when the driver was forced to brake suddenly. The cylinders bounced along the road, narrowly missing a trailing vehicle.

Fortunately, neither the cylinders nor their fittings were damaged as a result of the incident and no injuries were sustained.

The incident caused disruption to traffic as the driver reloaded the vehicle and proceeded to his destination.

Investigation showed that the driver had failed to ensure that the cylinders were appropriately restrained on the vehicle.

**DGAT** :      **W21/94**              **File No.** :      **216/94**



## DANGEROUS GOODS TRANSPORT ACCIDENT REPORT

**Date** : 17 November 1994      **Time** : 0400 hrs  
**Location** : Wright Road  
              MARDELLA  
**Dangerous Goods** : PETROLEUM FUEL  
**Involved** : Class                    3  
              Sub-Risk                   -  
              UN No.                    1270  
              Packaging Group : II  
              Quantity Involved : 40000 litres  
              Quantity Spilled : 5700 litres

### SCENARIO :

The driver of a tanker delivering fuel into a 70 kilolitre tank at a fuel depot failed to ensure that there was sufficient ullage in the receival tank to accept the volume of fuel he was delivering.

Two tanker compartments were unloaded successfully, however the unloading of the third compartment caused the receival tank to overflow, spilling fuel into the surrounding bund.

The driver did not immediately hear the fuel overflowing due to noise created by a passing train. This contributed to the severity of the spill. Upon finally realising that the tank was overflowing the driver shut off the supply pump and notified the emergency services.

Clean up operations were carried out and some fuel was recovered.

**DGAT** :      **W25/94**              **File No.** :      **230/94**





## **DANGEROUS GOODS TRANSPORT ACCIDENT REPORT**

**Date** : 09 December 1994      **Time** : 2200 hrs

**Location** : Great Northern Highway  
CHITTERING

SODIUM CYANIDE

Class                            6.1

Sub-Risk                        -

UN No.                         1689

Packaging Group : I

Quantity Involved : 40000 kg

Quantity Spilled : 0 kg

### **SCENARIO :**

The driver of a B-train transporting a freight container of sodium cyanide lost control whilst negotiating a right hand bend and rolled over.

The doors on the container on the lead trailer broke open on impact and two intermediate bulk containers (IBC) were dislodged. Fortunately these IBCs were not significantly damaged and no product was lost.

Both freight containers were taken back to the transport company's depot and the contents of the damaged container were loaded into another freight container before proceeding to the destination.

The driver received minor injuries and was taken by ambulance to hospital.

**DGAT** :      **W22/94**              **File No.** :      **224/94**

## APPENDIX 1

### ACCIDENT RECORDING POLICY

#### PURPOSE

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

#### SCOPE

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

#### CRITERIA

Incidents should be **Recorded Accidents** if they impact on or present a significant potential to impact on public safety. Respective Branch Managers shall assess each reported incident to determine whether they are **Recorded Accidents** according to the following criteria.

1. Any unintentional fire or explosion (including sabotage) involving or impinging on explosives or dangerous goods containers or storage facilities.
2. Any uncontrolled release of explosives or dangerous goods:
  - ❖ from a bulk container or pipeline;
  - ❖ that travels or impacts off the site where storage or handling occurs; or
  - ❖ that causes serious injury to any person or substantial damage to property;
3. Any incident where explosives or dangerous goods containers fall from a vehicle whilst it is in transit.
4. Any incident where a bulk container carrying explosives or dangerous good is damaged through rollover or impact.

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

- ❖ packages falling from a forklift, sustaining damage and minor leakage with no subsequent injury, property damage or off-site effect.
- ❖ packages of dangerous goods found on the roadside (with or without contents) and their origins remain undetermined.
- ❖ vehicle traffic accidents where the containers, their fittings and the dangerous goods remain intact and have not been subjected to impact eg a head-on collision of passenger vehicle and petrol tanker.
- ❖ an escape of dangerous goods that is expected during normal operations, maintenance or transfers.
- ❖ a loss of dangerous goods from a bulk container that is retained within the premises, does not impact off-site and does not cause any injury or property damage.
- ❖ incidents that do not involve substances classified as dangerous goods but are captured by WAHMEMS due to uncertainty or misinformation.



**K Price**

Director

EXPLOSIVES AND DANGEROUS GOODS DIVISION

13 February, 1995