Abstract
A river transportation incident. A collision occurred between a tug boat and a dredging boat killing an operator and injuring five others. The incident occurred as the tug boat was pushing two empty barges when it collided with the dredger causing a hole above the waterline. Five operators fell into the icy water and were rescued and taken to hospital where they were treated for hypothermia. No vessel sank as a result.

Lessons
[None Reported]
Abstract
A rail transportation incident. A fire occurred onboard and box car containing sodium hydrosulphite. Nearby residents were evacuated. Sodium hydrosulphite is highly flammable that can heat and ignite in the presence of moisture and air. Four people were affected by fumes.

Lessons
[None Reported]
An explosion occurred on a pipeline carrying crude oil. At least six people were killed in the explosion. It is thought that a bomb caused the rupture on the pipeline.

Lessons
[None Reported]
An explosion occurred on a gas pipeline at a gas plant setting fire to two chemical tanks containing methanol and glycol.
The fire was containing within two hours and fortunately no one was injured in the incident.
Fire fighters used water to cool the tanks and foam on the flaming liquid.
An investigation into the incident is underway.

Lessons
[None Reported]
Abstract
A rail transportation incident. Two carriages of a freight train derailed, fortunately the wagons stayed upright although the track was damaged in the incident. One wagon was carrying a freight container and another a 100 tonne flask, contents unknown. An investigation is underway into the cause of the derailment. Cost of repairs is estimated at £750,000 (2000).

Lessons
[None Reported]
**Abstract**

A rail transportation incident. An empty coal train derailed on its way from a power station spilling red diesel fuel onto nearby wetlands injuring many birds. No one was injured in the incident although it is reported that the driver was in shock. An investigation is underway to find the cause of the derailment.

**Lessons**

[None Reported]
**Source**: BBC NEWS, 26 NOVEMBER, 2000, (http://www.bbc.co.uk).

**Location**: Cornwall, UK

**Injured**: 0  **Dead**: 0

### Abstract
A marine transportation incident. A cargo ship containing more than 40,000 tonnes of metal ores, 370 tonnes of diesel and a quantity of other fuels suffered steering problems in strong winds. The cargo ship became disabled off the coast of Cornwall raising fears of pollution. Fortunately the ship managed to gain power and was escorted to safety.

[bauxite, magnesium ore, diesel oil, fuel oil, steering failure, near miss]

### Lessons
[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>TIME EUROPE, NOVEMBER 20, 2000.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Kitzsteinhorn, AUSTRIA</td>
</tr>
<tr>
<td>Injured</td>
<td>8</td>
</tr>
<tr>
<td>Dead</td>
<td>150+</td>
</tr>
</tbody>
</table>

**Abstract**
A rail transportation incident. A funicular train caught fire inside a tunnel. The train was carrying more than one hundred and fifty passengers to the top of a ski slope when the incident occurred. The fire fed by fresh air sucked into the tunnel and up through the train killing nearly all passengers, eight managed to escape. The cause of the fire is not known. An investigation into the incident is underway.

[passenger train, fatality, injury, fire - consequence]

**Lessons**
[None Reported]
A marine transportation incident. A container ship carrying hazardous materials, fuel and oil ran aground on a reef causing a hole in the bow section, there are no reports of any spillage.

An attempt to refloat the ship is being made.

[ship ran aground, chemicals unknown]

None Reported
Location: Arizona, USA
Injured: 3    Dead: 1

Abstract
A rail transportation incident. Two freight trains, one containing hazardous materials and the other diesel fuel collided causing several carriages to derail. A fire and small explosion occurred as a result. It is reported that three crewmembers were injured and one killed in the incident. Nearby residents were evacuated as a consequence. Fortunately no hazardous materials were released.

An investigation into the incident is being carried out.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Osun State, NIGERIA</td>
</tr>
<tr>
<td>Injured</td>
<td>-</td>
</tr>
<tr>
<td>Dead</td>
<td>100+</td>
</tr>
</tbody>
</table>

**Abstract**

A road transportation incident. A petrol tanker exploded into a ball of flames when in collision with a queue of stationary cars. More than one hundred people were killed in the incident.

[road tanker, fire - consequence, explosion, fatality]

**Lessons**

[None Reported]
Abstract
A rail transportation incident. A freight train carrying containers on flat bed cars derailed. It is reported that one of the containers was carrying chlorine. One of the cars carrying containers slid in the shallow parts of a river. Fortunately no spillage occurred.

Lessons
[None Reported]
Abstract
A marine transportation incident. An oil tanker spilled an estimated twenty thousand gallons of crude oil. The incident occurred when the tanker collided with a pier whilst trying to dock. Part of the tanker's hull was ripped open.

Lessons
[None Reported]
Abstract
A marine transportation incident. A marine tanker containing mainly styrene, a colourless, clear, odourless toxic liquid, sank in gale force winds after running aground. Other materials onboard included isopropanol, alcohol and methyl ethyl ketone. Fourteen crewmembers were winched to safety onboard a helicopter. It has been reported that styrene had been seen leaking from the vessel as it sank. Styrene is a carcinogenic, is slightly soluble in water and very corrosive. There are concerns that the spillage may cause environmental and ecological damage to sea life and nearby coastlines.

Lessons
[None Reported]
Abstract
A road transportation incident. A road tanker carrying fuel exploded when in collision with a bus carrying fifty-six people.

Lessons
[None Reported]
Abstract
A marine transportation incident. An oil tanker containing over 40,000 tonnes of crude oil released 7,000 tonnes of the product into the sea after running aground.
There are reports of no injuries but four cargo tanks have been damaged in the incident. A 300-meter boom is being used to contain the spill and to prevent more oil from escaping.

Lessons
[None Reported]
Abstract
A road transportation incident. A road tanker carrying sodium cyanide plunged into a river. An emergency barrier was immediately set up to contain the cyanide that had spilled into the river. Chemicals were poured into the river to neutralise the cyanide. No one is reported to have been injured or killed in the incident.

Lessons
[None Reported]
Abstract
A road transportation incident. An explosion and fire occurred when a road tanker carrying gasoline was in collision with a van. The driver of the van was killed. Nearby residents were evacuated as a precaution.

It is not known whether the road tanker was at full capacity of 9,800 gallons at the time of the incident.

Lessons
[None Reported]
A rail transportation incident. A cargo train carrying sugar cane and potash collided with two parked cargo trains triggering a fire. As a result of the collision six cars and three locomotives derailed injuring two people. It was reported that no hazardous materials were onboard at the time of the incident.

[freight train, collision, fire - consequence, derailment - consequence, injury]

Lessons

[None Reported]
Source: HAZARDOUS CARGO BULLETIN, NOVEMBER 2000.
Location: Urumqi, Zinjiang, CHINA
Injured: 300+  Dead: 60

Abstract
A road transportation incident. An explosion occurred on a truck carrying explosives for disposal. The incident occurred due to an uneven road causing excessive vibration. Sixty people were killed and more than three hundred injured in the incident. A nearby residential area was damaged.

[fatality, injury, damage to equipment]

Lessons
[None Reported]
Abstract
A road transportation incident. A truck carrying explosives for disposal exploded during transit killing approximately sixty people and injuring at least three hundred others.

An investigation into the incident is underway.

Lessons
[None Reported]
132207 September 2000

Location : Bilbao, SPAIN
Injured : -  Dead : 4

Abstract
A rail transportation incident. A collision occurred between two cargo trains causing one to derail and fall into a nearby river. Both trains were carrying aluminium coils at the time of the incident. Four people were killed in the incident.

Lessons
[None Reported]
A rail transportation incident. Anhydrous ammonia leaked from a freight train injuring sixty-one people and forcing the evacuation of nearby residents.

Lessons

[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>HAZARDOUS CARGO BULLETIN, NOVEMBER 2000.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Oregon, USA</td>
</tr>
<tr>
<td>Injured</td>
<td>0</td>
</tr>
<tr>
<td>Dead</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abstract**

A road transportation incident. A truck carrying 11,000 litres of herbicide caught fire and spilled an unknown quantity of the product into a nearby river. Ecological damage occurred.

[fire - consequence]

**Lessons**

[None Reported]
Abstract
An explosion and subsequent fire occurred on a 30-inch underground natural gas pipeline reportedly killing eleven people and injuring at least five others. An investigation into the rupture has revealed that a corroded section of the pipe was ejected in the explosion.

Lessons
[None Reported]
Abstract
A rail transportation incident. Six cars of an eight-car freight train containing liquefied petroleum gas (LPG) exploded when the train overturned. Twenty-five people were killed and several injured in the incident.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Athi River, AFRICA</td>
</tr>
<tr>
<td>Injured :</td>
<td>-</td>
</tr>
<tr>
<td>Dead :</td>
<td>17</td>
</tr>
</tbody>
</table>

**Abstract**

A rail transportation incident. A train carrying liquefied petroleum gas (LPG) exploded killing seventeen people and injuring many others. The incident occurred when the train carrying eight coaches of gas overturned.

**Lessons**

[None Reported]
Abstract
A road transportation incident. A National Guard vehicle carrying rocket pods overturned spilling explosives on a roadway. Two guardsmen were injured in the incident. Nearby residents were evacuated as a precaution. Fortunately no warheads were attached as they were training rockets.

Lessons
[None Reported]
Abstract
A rail transportation incident. A freight train including tankers containing a poisonous chemical derailed forcing the evacuation of nearby residents and the closure of a highway. Sparks from the derailed tankers caused small fires for several miles. Three of the tankers contained carbon disulphide, a poisonous, highly flammable chemical used in the making of solvents and cellophane. Two other tankers contained titanium dioxide and posed no threat to the environment. Fortunately no leak occurred.

Lessons
[None Reported]
Abstract
A rail transportation incident. Seven cars of a freight train, three containing carbon disulphide and two containing titanium dioxide, derailed. Fortunately no spillage occurred although a number of small fires were reported. Nearby residents were evacuated.

Lessons
[None Reported]
Abstract
A rail transportation incident. A freight train carrying nuclear waste derailed. The train was carrying four containers of low-level waste when it came off the track. Fortunately no one was injured and no structural damage to the containers occurred in the incident. Rail services in the area were disrupted.

[derailment - consequence, radioactive]

Lessons
[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>HAZARDOUS CARGO BULLETIN, NOVEMBER 2000.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>, GERMANY</td>
</tr>
<tr>
<td>Injured</td>
<td>1</td>
</tr>
<tr>
<td>Dead</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abstract**

A road transportation incident. A road tanker containing 30m3 of diesel overturned when a tyre blew out causing a diesel spill, which then caught fire. Fortunately the driver managed to escape but received burns.

**Lessons**

[None Reported]
<table>
<thead>
<tr>
<th>Date</th>
<th>Source</th>
<th>Location</th>
<th>Injured</th>
<th>Dead</th>
<th>Abstract</th>
<th>Lessons</th>
</tr>
</thead>
<tbody>
<tr>
<td>31 July, 2000</td>
<td>BBC NEWS</td>
<td>Okwabude, AFRICA</td>
<td>-</td>
<td>-</td>
<td>An explosion and fire occurred on an oil pipeline, it is not known whether anyone was killed. This is the sixth incident to have involved such vandalism to pipelines. [fire - consequence, deliberate acts]</td>
<td>[None Reported]</td>
</tr>
</tbody>
</table>
Abstract

Approximately 1,000 litres of toxic fuel additive leaked from a pipeline into a nearby watercourse. The company was alerted when nearby residents complained of nausea and a strong chemical smell. An investigation into the leak found a small hole in the pipe. The company was fined up to $560,000 (2000).

This incident occurred just two weeks after the same company spilled approximately four million litres of crude oil into one of the country's main rivers.

Lessons

[None Reported]
Abstract
A road transportation incident. A road tanker trailer separated from its tractor unit causing approximately 190 litres of gasoline to spill onto the highway.

Lessons
[None Reported]
Location: Frejus Tunnel, ITALY, FRANCE

Injured: 0  Dead: 0

Abstract
A road transportation incident. A tunnel linking Italy and France was closed for nine hours after a lorry caught fire one mile inside. The fire was quickly extinguished.

[fire - consequence]

Lessons
[None Reported]
Abstract
An air transportation incident. Concorde carrying one hundred and nine people crashed into a hotel two minutes after take off. All passengers, crew and four people on the ground were killed as the jet exploded into a ball of flames.
Within minutes dozens of fire engines and ambulances were on the scene to tackle the fire and search for survivors.
An investigation is being carried out into the cause of the crash although it is theorised that a massive rupture to the fuel tank occurred.

Lessons
[None Reported]

Location: Warri, NIGERIA

Injured: -  Dead: 40

Abstract
An explosion and fire occurred on an oil pipeline, the third in the space of a month. It is thought that forty people have been killed in the incident. It is reported that this is the sixth fire in two months.

[fire - consequence, fatality, deliberate acts, injury]

Lessons
[None Reported]
1315525 July 2000

Location : Sydney, AUSTRALIA
Injured : 0    Dead : 0

Abstract
A rail transportation incident. A collision occurred between two freight trains during routine shunting. Approximately 20,000 litres of naphthalene was spilled. Nearby resident were evacuated. Fortunately no one was injured in the incident.

[evacuation]

Lessons
[None Reported]
Location:,
Injured: -  Dead: 2
Abstract
A marine transportation incident. An explosion and fire occurred on board a marine tanker containing 2,000 tonnes of diesel. Two people were killed and one missing in the incident.
Lessons
[None Reported]
Abstract
A marine transportation incident. A cargo ship ran aground, caught fire and sank off the coast of West Bengal. Operations of a nearby port are likely to be affected but environmental damage has been ruled out. The crew of the ship were safely taken ashore by coast guards.

Lessons
[None Reported]
### Abstract

A road transportation incident. A bus carrying chemicals exploded killing at least sixteen people and seriously burning ten others. The cause of the explosion is not known but approximately twenty containers of unknown chemicals were on board at the time of the incident.

[fatality, explosion, burns, unidentified cause, injury]

### Lessons

[None Reported]
Abstract
At least four million litres of crude oil leaked from an underwater pipeline at a refinery into a nearby river.
The incident occurred when the pipeline ruptured spilling the crude for up to two hours into the river.
More than thirty floating barriers have been set up to try to contain the spill and to vacuum the oil off the surface.
The company has been fined $100m (2000).
[pipeline failure, environmental, ecological damage]

Lessons
[None Reported]
Location : Ife, Ijala, NIGERIA
Injured : -  Dead : 30+

Abstract
A fire and explosion occurred on a pipeline killing more than thirty people. It is thought that vandals are the main cause of the incident. This incident occurred less than a week after a similar incident that killed over two hundred people just ten kilometres away in Warri.

[fire - consequence, deliberate acts, fuel, injury]

Lessons
[None Reported]
A road transportation incident. A tank truck was in collision with a road vehicle causing the release of 1,500 gallons of gasoline to be spilled. The spill caused soil contamination. Gas fumes overcame one fire fighter.

A quick response prevented the gasoline from entering the sewer system.

[gas / vapour release, injury]

Lessons

[None Reported]
Abstract
An explosion occurred on a pipeline carrying petrol killing and injuring at least one hundred people. Another one hundred are reported missing. The incident occurred when people were using buckets to collect petrol leaking from the pipeline after thieves had apparently punctured it. The area has been sealed off. It is feared that two hundred and fifty people may have been killed in the incident.

Lessons
[None Reported]
Abstract
A road transportation incident. A truck carrying 130 drums of di-n-butylamine collided with an articulated lorry causing sixty-four drums to fall, three of which fell into a 60m valley and six leaked onto the road.

Lessons
[None Reported]
Abstract
A river transportation incident. A tank barge containing petroleum distillate collided with a moored construction barge causing approximately 70m3 of the distillate to spill into the water.

[river barge, collision]

Lessons
[None Reported]
An explosion occurred on a pipeline carrying heated gasoline injuring a worker. The incident occurred as workers were trying to shut down the unit because of a leak. The fire was eventually brought under control.

Abstract

Lessons

[None Reported]
### Abstract
A marine transportation incident. A bulk carrier developed a hole in her hull as she was being towed and eventually sank as a result. A large quantity of oil leaked from the sinking vessel causing an oil slick which threatening a colony of penguins.

### Lessons
[None Reported]
An explosion and fire occurred on a pipeline. The explosion enveloped people as they siphoned petrol from the pipeline with buckets. It is thought that ten people were killed after the vandalised oil pipeline caught fire.

[fire - consequence, deliberate acts, fatality, gasoline]

Lessons

[None Reported]
A rail transportation incident. A freight train derailed causing at least twenty cars to derail. One car containing propylene glycol was damaged in the incident resulting in a slight spillage of the chemical.

Nearby residents were evacuated as a precaution.

An investigation into the incident is being carried out.

[derailment, evacuation]

Lessons

[None Reported]
Abstract
A rail transportation incident. Twenty-nine of eighty-two cars of a freight train derailed. One containing methyl chloride was reported to have leaked. The other cars contained sulphuric acid and propane. Nearby residents were evacuated. Fortunately no one was injured in the incident.

Lessons
[None Reported]
A road transportation incident. A spillage of mercury occurred from a road tanker making a delivery. Forty-six people were tested for mercury poisoning, eight of them were sent to hospital.

Mercury poisoning can damage the kidneys and nervous system and cause birth defects.

The cause of the spill is being investigated.

Lessons

[None Reported]
Abstract
A rail transportation incident. A rail car derailed and crashed into pipelines carrying crude oil, gasoline, methanol and natural gas. Damage to the pipelines occurred but no release was reported. Repairs could take up to three weeks to complete.

Lessons
[None Reported]
A 42-inch pipeline ruptured releasing natural gas. The incident occurred during pressure testing. The gas was quickly turned off and there was no danger to the environment.

[pipeline failure, near miss]

Lessons

[None Reported]
Abstract
A rail transportation incident. Approximately 3,000 nearby residents were evacuated when a freight train derailed. One of the derailed cars contained flammable and toxic toluene diisocyanate another contained acrylic acid. Demolition experts set explosives on the pressurised tankers as handling them would be safer if the toxic substances inside were burned off. Damage occurred to 1,200 feet of rail track and a 189 foot bridge.
No injuries occurred from the incident.

Lessons
[None Reported]
Abstract
An air transportation incident. An airliner carrying 150 people collided with a cargo plane on a runway killing the cargo plane's co-pilot and injuring the pilot. The incident occurred as the passenger plane was about to take off when it collided with the cargo plane which was waiting for clearance on a side runway. An investigation is underway into the cause of the collision.

Lessons
[None Reported]
Abstract
Approximately 900 gallons of a chlorine based chemical spilled in a residential area. The surrounding area was evacuated.
The incident occurred when a leak occurred from a 3,000-gallon road tanker, which was delivering 1,900 gallons to a local swimming pool.
[evacuation, gas / vapour release, road transportation]

Lessons
[None Reported]
Abstract
A rail transportation incident. Six tank cars of a freight train derailed after heavy rains flooded the track, approximately 100 tonnes of ammonia solution spilled. Nearby residents were evacuated as a precaution. No injuries occurred.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>HAZARDOUS CARGO BULLETIN, JULY 2000; LLOYDS LIST.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>New Iberia, Louisiana, USA</td>
</tr>
<tr>
<td>Injured</td>
<td>0</td>
</tr>
<tr>
<td>Dead</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abstract**

A rail transportation incident. Ten cars of a cargo train derailed, three cars overturned as a result, one containing flammable butyl acrylate leaked. Nearby residents were evacuated as a precaution.

**Lessons**

[None Reported]
Abstract
A rail transportation incident. A fire and explosion occurred on a freight train carrying toxic chemicals forcing the evacuation of nearby residents. The car was carrying 148,000 pounds of sodium dithionite, a flammable product the can produce irritating, corrosive or toxic gasses. The chemical is also known as sodium hydrosulfate. The car with the chemical still burning was moved approximately one mile south of the city. No injuries were reported.

Lessons
[None Reported]

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Location: Seligman, USA

Injured: 0  Dead: 0

Abstract

A rail transportation incident. A freight train derailed causing six cars containing hazardous materials, vinyl acetate and ethanol, to overturn. Two of the overturned cars were reported to be leaking.

No one was injured in the incident.

[derailment, spill, materials - hazardous]

Lessons

[None Reported]
Location: Georgia, USA
Injured: 0  Dead: 0

Abstract
A road transportation incident. An explosion occurred when a car collided with a road tanker carrying diesel fuel, which collided with a tractor-trailer carrying a farm chemical.
No injuries were reported.
[collision, unknown chemicals]

Lessons
[None Reported]
A road transportation incident. A road tanker carrying liquid propane overturned on a highway when it was involved in a collision with another vehicle. An unknown amount of propane leaked from the tanker as a result. Nearby residents were evacuated as a precaution.

[spill, evacuation, near miss]

Lessons

[None Reported]
A road transportation incident. A road tanker carrying 125,000 cubic feet of flammable liquid hydrogen caught fire when the tankers vent stack malfunctioned. The area within a one-mile radius was evacuated. No one was injured in the incident. An investigation into the cause of the vent stack failure is underway.

[fire - consequence, mechanical equipment failure, evacuation]

Lessons

[None Reported]
Approximately 2,200 litres of oil leaked from a pipeline into the Gulf of Mexico causing a 4 km oil slick. The pipeline was immediately shutdown and an investigation into the leak is being carried out.

[spill, environmental]

Lessons

[None Reported]
Abstract
A marine transportation incident. A marine tanker carrying 15,000 tonnes of gasoline ran aground on a sand bank. No damage or pollution occurred in the incident, although some cargo lightered.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>HAZARDOUS CARGO BULLETIN, JULY 2000; LLOYDS LIST.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Delaware, USA</td>
</tr>
<tr>
<td>Injured</td>
<td>0</td>
</tr>
<tr>
<td>Dead</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abstract**

A river transportation incident. The steering of a river tanker carrying ammonium nitrate cargo broke causing it to ground. No pollution occurred. The tanker was refloated.

[steering failure, transport effects]

**Lessons**

[None Reported]

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Location: Prince George's County, USA

Injured: 0  Dead: 0

Abstract

Approximately 125,000 gallons of oil leaked from a power company's pipeline causing a massive oil spill. The spill occurred in a marshland and was contained in a nearby creek but did not enter the nearby river.

An investigation is being carried out into the cause of the leak.

[ecological damage, environmental]

Lessons

[None Reported]
A rail transportation incident. Two freight trains collided when it is thought that one of the trains brakes failed. Two cars of one of the trains contained approximately 90 tonnes of propane gas. The surrounding area was evacuated as a precaution due to a fire that broke out which threatened the cargo of propane.

Firemen used a remote-controlled water cannon to pump thousands of water per minute onto the tank cars to cool them without dousing the flames.

**Abstract**

A rail transportation incident. Two freight trains collided when it is thought that one of the trains brakes failed. Two cars of one of the trains contained approximately 90 tonnes of propane gas. The surrounding area was evacuated as a precaution due to a fire that broke out which threatened the cargo of propane.

Firemen used a remote-controlled water cannon to pump thousands of water per minute onto the tank cars to cool them without dousing the flames.

**Lessons**

[None Reported]
Abstract
A marine transportation incident. A barge carrying 28,400 l diesel broke free from its moorings and drifted aground on sands.

Lessons
[None Reported]
Abstract
A marine transportation incident. A Ro-ro lost four containers overboard in heavy seas, one contained p-cresol and another contained epichlorohydrin.

Lessons
[None Reported]
Location: Choudrant, Los Angeles, USA

Injured: 0   Dead: 0

Abstract
A road transportation incident. A chemical tanker containing 21 tonnes of isobutyronitrile was involved in a collision between two other trucks. The chemical tanker subsequently overturned. Nearby residents were evacuated and both sides of the highway were closed as a precaution due to isobutyronitrile being an extremely hazardous material. Fortunately no leak occurred and no one was seriously injured in the incident. Isobutyronitrile is a gasoline additive that also is used to make pesticides and other chemicals. Isobutyronitrile can get into the body through the eyes or skin, by being inhaled or swallowed. The report stated that trying mouth-to-mouth resuscitation could poison the would-be rescuer.

Lessons
[None Reported]
A road transportation incident. Sulphuric acid was spilled during a routine delivery at a water treatment plant. Rain water from a storm the night before made it difficult to determine the exact amount of acid spilled. It is thought to be approximately 65 gallons.

Sulphuric acid reacts violently when mixed with water, severely irritates the eyes, respiratory tract and skin. Sulphuric acid has several industrial purposes, including: pulp and paper manufacturing; copper, steel and metal fabrication; fertiliser, chemical, textile, explosive and paint manufacturing; soap and detergent production; water treatment and petroleum product refinement.

Lessons

[None Reported]
Abstract
A rail transportation incident. A rail tanker containing isobutylene derailed and overturned forcing the evacuation of the surrounding area. The incident occurred when the rail tanker was being moved to a siding rail to allow another train to pass on the main line, when one of the wheels fell off. Isobutylene is a colourless liquid used in the manufacture of synthetic rubber and resins.

Lessons
[None Reported]
Abstract
A rail transportation incident. An unknown amount of vinylbenzene (styrene), leaked from a freight wagon that was coupled to a train waiting at a station. The following day a leak of ethyl acrylate occurred. Six people were affected by the release of styrene fumes including the driver of the train. All passengers were evacuated.
No injuries occurred from the spill of ethyl acrylate.

[fgas / vapour release, people, evacuation, rail transport, injury]

Lessons
[None Reported]

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Location: Kenedy, Texas, USA

Injured: 0  Dead: 0

Abstract
An explosion occurred on a pipeline causing severe damage. Valves were shut off to stop the flow of natural gas and a nearby road was closed as precaution. The subsequent fire was extinguished in about an hour.

An investigation into the explosion is underway.

Lessons
[None Reported]
Abstract
A fire occurred on a pipeline killing approximately 50 people who at the time is thought to have been siphoning gasoline from the pipeline. It was not immediately clear what started the fire but sabotage is thought to have been the cause.

Lessons
[None Reported]
Abstract
A rail transportation incident. Approximately 1000 gallons of fuel spilled from one or more tank cars when a freight train derailed. Clean-up operations are underway.
The incident caused damage to about a quarter-mile of track.

Lessons
[None Reported]
Abstract
An air transportation incident. Two one tonne boxes containing sodium cyanide pellets were being transported by helicopter when they were accidentally dropped from a sling.

It is thought around 100 and 150 kilos of the cyanide has been dissolved by rain and spilled into a nearby river.

Approximately 70% of a one tonne pallet has been recovered, the remaining cyanide will be neutralised with ferrous sulphate.

An investigation into the incident is being carried out.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Disclaimer: The Chemical Incident Reports Center (CIRC) is an information service provided by the U.S. Chemical Safety and Hazard Investigation Board (CSB). Users of this service should note that the contents of the CIRC are not intended to be a comprehensive listing of all incidents that have occurred; many incidents go unreported or are not entered into the database. Therefore, it is not appropriate to use the CIRC database to perform statistical analysis that extends conclusions beyond the content of the CIRC. Also, although the CSB never knowingly posts inaccurate information, the CSB is unable to independently verify all information that it receives from its various sources, much of which is based on initial reports. CIRC users should also note that the CSB receives more comprehensive reports about incidents that occur in the U.S.; comparisons made between U.S. incidents and those in other nations should take this fact into consideration.</td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>Bello Horizonte, BRAZIL</td>
</tr>
<tr>
<td>Injured</td>
<td>0</td>
</tr>
<tr>
<td>Dead</td>
<td>0</td>
</tr>
<tr>
<td>Abstract</td>
<td>A rail transportation incident. A fire occurred when a 32-car train carrying thousands of gallons of diesel fuel derailed. Several explosions occurred when the train derailed.</td>
</tr>
<tr>
<td>Lessons</td>
<td>[None Reported]</td>
</tr>
</tbody>
</table>
A rail transportation incident. Nearby businesses and roads were evacuated when four cars of a train derailed and overturned. One car containing hydrogen peroxide poured thousands of gallons onto the surrounding area, another poured limestone and a petroleum compound spilled from a third car. Cleanup operations are underway.

Lessons

[None Reported]

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Location: Igongwe, TANZANIA

Injured: 40+  Dead: 28+

Abstract
A road transportation incident. A fuel tanker overturned and caught fire. The fire occurred when residents in the area rushed to the scene to extract fuel from the overturned tanker, but in the process tampered with the battery, which sparked off the fire.

Lessons
[None Reported]
Abstract

A road transportation incident. A road tanker containing aviation fuel overturned on a highway when trying to avoid slower vehicles. The driver was killed in the accident.

[fire - consequence, fatality]

Lessons

[None Reported]

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Location: Austin, Texas, USA

Injured: 0  Dead: 0

Abstract
A road transportation incident. An 18-wheeler carrying chemicals overthrown on a highway. The truck was carrying three drums of sulphuric acid and two drums of a cleaning agent when the incident occurred. One of the 330-gallon drums of sulphuric acid was punctured in the incident causing half of its contents to spill into a storm drain, which runs into a nearby creek.

Lessons
[None Reported]
Abstract
Seven gas lines at a distribution centre caught fire and sparked off several explosions. Fire fighters manage to contain the blaze after three hours one fire fighter was injured.
Each gas pipeline had a 2,600-gallon capacity.
It is thought that the cause of the explosion was due to a high-pressure release from emergency blowout valves.
[explosion, fire - consequence, high pressure, injury]

Lessons
[None Reported]
Abstract
A marine transportation incident. An investigation is being carried out into an alleged oil spill from a chemical tanker. The slick 19 to 25 miles in length and 50 metres wide was observed coming from the chemical tanker.

Lessons
[None Reported]
Abstract
A road transportation incident. A lorry carrying gas canisters was hit by another vehicle while on the hard shoulder after breaking down. Approximately three other vehicles were involved in the incident.
The collision caused 20 to 30 exploding gas canisters to be thrown up to 400 metres.
The blaze was so intense it damaged the road surface.
The driver of the propane lorry was taken to hospital.

Lessons

[None Reported]
Abstract
A road transportation incident. An 18-wheeler carrying approximately 25,000 pounds of military high-explosive rounds was involved in a collision. The highway was evacuated over two miles as a precaution.
All injuries occurred as a result of the collision and not the cargo.
Explosive experts worked with the bomb squad and the hazardous materials team to remove the rounds.

Lessons
[None Reported]
Approximately 600,000 gallons of oil is thought to have leaked over a period of 8-12 years from a hole in an underground pipeline previously discovered. The problem emerged after contractors sank a well and began pumping oil from the ground. So far approximately 40,000 gallons of oil had been pumped from the ground at a rate of approximately 3,000 gallons a day.

[ diesel fuel, excavation, spill ]

Lessons

[ None Reported ]
A road transportation incident. Approximately 20 pounds of trimethylamine was released when a relief valve on a truck opened. A county warning siren sounded after being activated by the leak. Triethylamines have a strong, pungent odour and can be smelt at a concentration as low as a half-part per billion.

[gas / vapour release, mechanical equipment failure]

Lessons

[None Reported]
A road transportation incident. A tractor-trailer collided with a gasoline tanker causing a spill of approximately 1,000 gallons of volatile fuel onto the road and surrounding area. Hazardous materials teams used foam to soak up the fuel spill and used a 40 by 40 foot diked area to prevent the fuel from running into the surrounding fragile environment.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th>Location</th>
<th>Savannah, USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injured</td>
<td>0</td>
</tr>
<tr>
<td>Dead</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abstract**

A road transportation incident. A truck carrying plastic containers containing 41,000 pounds of ferric chloride buckled under the weight. Three containers ruptured as a result and it is thought that they started to leak from the top. A hazardous response team used granulated absorbent material to soak up diesel fuel that spilled and a baby pool was used to catch diesel fuel still leaking.

**Lessons**

[None Reported]
Location: Vicksburg, USA

Injured: 0  Dead: 0

Abstract

A road transportation incident. A tanker truck carrying approximately 4,700 gallons of formaldehyde overturned forcing the evacuation of nearby residents. The incident occurred when a tire blew out causing the vehicle to veer sharply. Approximately five gallons of the toxic chemical, which can cause asphyxiation and death, was spilled.

Lessons

[None Reported]
A marine transportation and road transportation incident. A semi-trailer tanker aboard a cargo ferry ruptured a tank and spilled its contents of gasoline onto the deck and into the sea.

The dispersion of the gasoline was a priority as concentrated vapours become explosive.

Lessons

[None Reported]

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Location: , USA

Injured: 0  Dead: 0

Abstract
A road transportation incident. The driver of a truck discovered a leak of organic peroxide. As the driver went to open the doors to investigate he became contaminated with organic peroxide.

The driver was decontaminated in a special shower. Fortunately he was not injured.

[contamination, people]

Lessons
[None Reported]
Abstract
An air transportation incident. A cargo plane carrying normal industrial freight crashed into a car auction yard and burst into flames. All three crewmembers were killed.
Just before the crash, the pilot reported a problem with the positioning/balance of the plane's load.

[aircraft, fire - consequence, explosion, fatality]

Lessons
[None Reported]
Abstract
A rail transportation incident. A train consisting of propane tank cars derailed in the middle of a town. Residents within a three quarter mile radius were evacuated. Fortunately there were no reports of injuries or leaks.

Lessons
[None Reported]
Abstract
A road transportation and marine transportation incident. A truck carrying approximately 26 tonnes of sodium hydrosulphide started to leak whilst on board a freighter ferry. The leak was discovered when an employee of the freighter ferry detected fumes. A small spill was later found in the top of one of nine containers of the chemical in the truck. The spill was quickly cleaned up and the all clear given. Sodium hydrosulphide is used in papermaking and normally presents minimal risk when properly packaged. However, its fumes are toxic and it can explode and burn in extreme temperatures.

Lessons
(None Reported)
Abstract
A road transportation incident. An eight wheel mobile crane collided with an articulated lorry then ploughed through the central reservation and landed on top of an oncoming car, which was then struck from behind by a lorry carrying oil drums.
The driver of the crane, the car and the lorry were killed.
Oil drums were scattered over the motorway.
The motorway was closed to allow rescue and recover vehicles to the scene.

Lessons
[None Reported]

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Location: USA
Injured: 0  Dead: 0

Abstract
A road transportation incident. A road tanker carrying approximately 2,500 gallons of oil spilled an uncertain amount of the oil on a highway. A hazardous material team arrived on the scene to carry out the cleanup. The extent of environmental damage is not known.

Lessons
[None Reported]
Source:

Disclaimer:
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Location: Hong Kong, CHINA

Injured: 0   Dead: 0

Abstract
A marine transportation incident. Approximately 15 tonnes of styrene leaked into underground drains after a tanker overturned. The chemical spilled into waters surrounding a bird-watching area.

Lessons
[None Reported]

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**Location**: Texas, USA

**Injured**: 0  **Dead**: 0

**Abstract**
A road transportation incident. A tanker truck carrying furfural overturned causing the substance to spill into a drainage hole that empties into a nearby ditch, which drains into a ship channel. Approximately 9,000-gallons was spilt.
People were advised that fish in and around the area might be contaminated.
Clean-up efforts are underway.
Furfural is a colourless, oil, all-natural ethanol derivative used mainly in the manufacture of plastics. The substance is highly flammable, explosive and toxic. Furfural is lethal if ingested or inhaled. If a person comes in contact with the chemical it can also irritate the skin, eyes and throat.

**Lessons**
[None Reported]
A road transportation incident. A road tanker carrying a mixture of lead and chromium started to leak, forcing the evacuation of nearby residents and road closures. The roads were closed for a couple of hours as a precaution as the chemicals are dangerous if inhaled.

Lessons
[None Reported]
**Abstract**
A road transportation incident. A tanker carrying 10 kilolitres of acrylic acid overturned on an expressway. The driver suffered minor injuries. Acrylic acid is highly corrosive and flammable, inhalation of the vaporised chemical in large amounts or contact with skin can cause inflammation.

**Lessons**
[None Reported]
Abstract
A marine transportation. Three crewmembers were killed when an explosion occurred on board a marine tanker whilst manoeuvring to load a cargo of crude oil. The vessel broke in two and one part sank. Slight pollution occurred.

Lessons
[None Reported]

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Location: Lowell, USA

Injured: 0  Dead: 0

Abstract
A road transportation incident. A road tanker carrying 11,900 gallons of gasoline overturned causing a spillage. The tanker was punctured on the right side causing the fuel to empty into nearby catch basins feeding into a nearby river. The driver was uninjured in the incident. Clean-up operations were carried out to contain the spill and foam was applied to prevent a fire. Nearby towns were forced to draw water from alternate sources as a precaution.

Lessons
[None Reported]
Abstract

Approximately 11,500 and 21,000 barrels of oil spilt from a ruptured pipeline into a creek. Nearby residents were evacuated. A precautionary boom was placed by the mouth of the creek to contain any oil from spilling into the river.

It was not immediately known what caused the rupture.

Lessons

[None Reported]
A road transportation incident. A truck jack-knifed triggering a 24-vehicle pile-up, killing 10 people.

An unexpected covering of ice and snow had covered the highway.

One tractor-trailer involved in the crash, caught fire upon impact. It took over an hour to contain the blaze, which was fuelled by hydrochloric acid leaking from one of the other trucks involved.

[burns, fire - consequence, fatality, collision, spill, weather effects]

Lessons

[None Reported]

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Location: Flint, USA

Injured: 0  Dead: 0

Abstract
A rail transportation incident. One of 55 33,000-gallon propane rail cars caught fire causing the evacuation of a 1 mile radius in fear of an explosion.

Flames reaching about 4 to five feet high emanated from a valve on the burning car.

Fire officials explained that the fumes would create a greater explosive danger if they put the fire out.

[fire - consequence]

Lessons
[None Reported]
A rail transportation incident. One of 55 33,000-gallon propane cars caught on fire early this morning, causing the local police to evacuate a 1-mile radius and close several schools near the rail yard for fear of an explosion.

It is not known what sparked the fire.

The fire department officials feared that the fire could spread to 54 other cars, each carrying up to 33,000 gallons of propane. Fortunately, crews managed to separate all of the freight cars attached to the burning car by 9:30 a.m.

Officials said they would not try to extinguish the fire until the experts arrive. Flames reaching about 4- to 5-feet high emanated from a valve on the burning car. Fire officials said the fumes would create a greater explosive danger if they put the fire out.

[fire - consequence, evacuation]

Lessons
[None Reported]
A road transportation incident. A tractor-trailer swerved on ice when attempting to avoid a pickup truck that lost control, spilling hazardous chemicals including phosphoric acid and liquid chlorine. The road was closed and no evacuations were reported.

[weather effects]

[None Reported]
Abstract
Approximately 1,300 tonnes of oil leaked from a pipeline into the sea. 26km of floating barriers were deployed to prevent the oil from reaching nearby beaches.

Lessons
[None Reported]
A road transportation incident. A tractor-trailer carrying hazardous materials turned over. Fortunately none of the 1,200 gallons of sodium hydroxide leaked, no one was injured and no one evacuated.

The accident occurred when the driver of the truck attempted to break, the break lines froze so the driver pulled off the road's shoulder but lost control of the vehicle.

Sodium hydroxide (caustic soda), is used for water treatment operations and is highly corrosive.

Lessons

[None Reported]
Abstract
An 8-inch gas pipeline ruptured creating a large crater on a highway forcing its closure. The release of gas from the pipeline rupture did not ignite. Several nearby homes were evacuated, there were no reports of any injuries.

Lessons
[None Reported]
A marine transportation incident. A fire occurred on an oil slick killing seven people and burning about twenty five vessels and other property. Barges carrying stolen oil were intercepted by police and then towed away to their station. One of the vessels was found to be leaking. The fire occurred when a local resident lit a match.

Lessons

[None Reported]
A marine transportation incident. A cargo vessel and barge collided. The incident occurred as the 732-tonne barge containing gravel and sand was being towed by another tub boat. The barge sank as a result. Four crew-members are reported to be missing.

An investigation into the incident is being carried out.

[collision, sinking]

Lessons

[None Reported]
A marine transport incident. Twelve nuclear submarines were taken out of service as a precaution when cracks were found in the reactor cooler system of one submarine. Checks are being carried out to determine whether this incident could occur on the other eleven submarines.

[reactors and reaction equipment, near miss, radioactive, marine transportation]

Lessons
[None Reported]
Abstract
A marine transportation incident. An empty oil tanker ran aground on a beach in gale force winds. The 992 tonne oil tanker lost her anchor during force six gales, heavy sea and pouring rain. Fortunately the tanker was pulled off the beach a successfully re-floated.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Hatfield Forest, UK</td>
</tr>
<tr>
<td>Injured</td>
<td>0</td>
</tr>
<tr>
<td>Dead</td>
<td>4</td>
</tr>
</tbody>
</table>

**Abstract**

An air transportation incident. A cargo plane carrying chemicals on board crashed killing all crew members. It is thought that the plane's cargo included paint, benzene and other chemicals.

[explosion, fire - consequence, fatality]

**Lessons**

[None Reported]
A marine transportation incident. A marine tanker containing more than 20,000 tonnes of diesel oil, split in two. More than 10 million litres of oil was spilled causing severe environmental damage. The sunken wreckage still contains approximately 23 million litres. So far approximately 100,000 birds have been killed. 'An ecological catastrophe'.

Lessons
[None Reported]
Abstract
A road transportation incident. An explosion occurred at a chemical warehouse when two lorries collided. A fire occurred from spilled petrol which then spread to the warehouse. It is thought that the explosion was caused by a spontaneous ignition of fertilisers stored in the warehouse. The explosion was felt up to 5 km away, destroying cars and shattering windows in nearby buildings. Hundreds of people including emergency services, helped to combat the flames in a bid to stop them spreading to a nearby refinery. At least 15 people were killed and 80 injured.

Lessons
[None Reported]
Abstract
A rail transportation incident. A 144-car freight train derailed due to a worn wheel bearing. An uncertain amount of acid leaked from one car carrying 5.5 tonnes of product. A nearby residential area was evacuated.
[derailment - consequence, bearing failure, spill, evacuation]

Lessons
[None Reported]
Abstract

A rail transportation incident. A freight train collided with an empty grain train, killing a conductor and the driver of a van that was parked by the tracks. Six of the freight cars derailed and four others overturned. A fire occurred from a diesel spill from the engine but was quickly extinguished. The grain train was parked on the main tracks when the freight train collided with it at the junction with a side track.

An investigation is being carried out as to why the freight train didn't go on to the side track.

Lessons

[None Reported]
Abstract
An explosion occurred on a liquid propane gas line. Two people were injured.
The most likely cause of the explosion is thought to have been due to two passing trucks igniting a vapour cloud, which had formed from a leak in the pipeline. [road transport, road transportation, LPG, hot surface, leak, vapour cloud explosion, injury]

Lessons
[None Reported]
Location: Ecuador, SOUTH AMERICA
Injured: 0    Dead: 0

Abstract
A main oil pipeline was blown-up. The blast, caused by dynamite, put a section of the line out of service and caused tens of thousands of barrels of crude oil to spill.

Lessons
[None Reported]
Abstract
A road transportation incident. A road tanker carrying 49,000 pounds of nitric acid overturned when the driver swerved to miss a deer. 3,000 gallons of nitric acid spilled. Nitric acid fumes can cause severe burns or death if inhaled. Nitric acid is used in chemical synthesis and in making dyes and explosives. Nearby residents were evacuated.

Lessons

[loss of control, driver error]
A marine transportation incident. A cargo ship carrying bananas and pineapples collided with a tower causing a 26m gash in its side and five tonnes of lubricating oil to spill into the sea. The vessel also held approximately 440 tonnes of heavy fuel oil and 70 tonnes of diesel. It was not thought that the ship was in danger of sinking.

Lessons

[None Reported]
A gas explosion occurred whilst workers were digging up a gas pipeline, killing at least eleven people and injuring thirty five. The incident was brought under control by cutting the gas supply, but the fires took several hours to burn out. Several houses were damaged in the blast and local people were evacuated.

[excavation, fatality, evacuation, fire - consequence, injury]

Lessons

[None Reported]
Location: , THAILAND
Injured: -  Dead: 2

Abstract
A marine transportation incident. An explosion occurred on an oil tanker killing two crewmembers. A nearby cargo ship was also destroyed in the ensuing fire.

[fire - consequence, fatality]

Lessons
[None Reported]
<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
<th>Source</th>
<th>Location</th>
<th>Injured</th>
<th>Dead</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 October 1999</td>
<td>A road transportation incident. A tractor-trailer ran out of control off a road and overturned. Approximately 6,700 litres of crude oil spilled as a result.</td>
<td>HAZARDOUS CARGO BULLETIN, MAY 2000.</td>
<td>Alberta, CANADA</td>
<td>1</td>
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</tr>
</tbody>
</table>

**Abstract**

A road transportation incident. A tractor-trailer ran out of control off a road and overturned. Approximately 6,700 litres of crude oil spilled as a result.

**Lessons**

[None Reported]
| Location: | Ladbroke Grove, Paddington, UK |
| Injured: | 150+ |
| Dead: | 31 |

### Abstract

A rail transportation incident. At least 30 people were killed and over 150 were injured when two passenger trains collided. The force of the collision caused carriages to derail and one train burst into flames.

An investigation is underway, but it is thought that one of the trains ran through a red light.

### Lessons

[None Reported]
Abstract
A marine transportation incident. A large spillage of diesel oil polluted a lake, a stream and drainage systems. The oil leaked from an oil tanker.

Lessons
[None Reported]
Abstract
A bomb attack carried out on a pipeline stemmed the flow of crude oil. The pipeline had just begun exporting crude oil. Slight damage occurred.

Lessons
[None Reported]
Location: Maryland, USA

Injured: 37    Dead: 0

Abstract
A rail transportation incident. A passenger train collided with a freight train in a rail yard, injuring 37 people. The collision damage the locomotive and the rear of the freight car. All cars remained upright.

[None Reported]

[None Reported]
Abstract
A road transportation incident. Thirteen people were injured in a head on collision involving a minibus and a road tanker. The tanker was carrying low hazard liquid fertiliser. No spillage occurred. Cause is not known.

Lessons
[None Reported]
Abstract
A marine transportation incident. A fire occurred onboard a cruise ship which was carrying 1,700 passengers. The fire started in the engine room, which was quickly put out, but had damaged the engines. The star-board motor was temporarily restarted, but failed again, stranding the ship 100 miles off the coast.

Lessons
[None Reported]
Abstract
A rail transportation incident. At least 20 people were killed and 70 injured when an express train and unmanned railway engine collided head-on. It is thought that the unmanned engine was out of service and may have rolled two miles because of defective breaks.

Lessons
[None Reported]
A rail transportation incident. A train derailed when a mechanical digger being used on road works was left on the tracks, where it was hit by a passenger train carrying approximately 100 people. No one was seriously injured. Possible cause: vandalism.

[derailment - consequence, collision, bulldozer/jcb/digger, injury]

Lessons

[None Reported]
Abstract
A marine transportation incident. 2,000 gallons of oil leaked into a Bay from a dredging vessel. The oil leaked from a ruptured fuel tank after rough seas apparently threw part of the dredging apparatus against the vessel. Part of the equipment punctured through the hull, opening a 6 inch to 8 inch wide hole in the tank. A small amount of oil washed ashore were work crews collected a bag full of oil coated rocks and plants, and 14 birds were also recovered, thick with oil.
[heavy seas, spill, ecological damage]

Lessons
[None Reported]
Abstract
A marine transportation incident. Approximately 9000 litres of oil spilled into a bay when a fuel tank onboard a dredger ruptured. The spillage occurred during heavy seas, which apparently caused part of the dredging equipment to smash into the hull of the vessel.

Lessons
[None Reported]

Location: Ontario, USA

Injured: 0  Dead: 0

Abstract
A rail transportation incident. Six cars of a rail tanker containing flammable liquid derailed. This led to the evacuation of hundreds of people. One of the cars rolled past a steel stopper at the end of a storage line, spilling a large amount of recovered alcohol into a car park. A temporary dyke of sand was created to stop the flow of liquid. Some material entered a storm drain. The incident is under investigation.

Lessons
[None Reported]
A marine transportation incident. A cargo vessel collided with a cruise liner with more than 2,000 people on board.

Fortunately, the cruise liner was able to reach a nearby port safely despite severe damage to its bow.

The 52,000 tonne container ship, caught fire after the collision. More than 40 of the ships 3,092 containers held hazardous materials two of which carrying cyanide, these were stowed in the centre of the vessel and there was no danger of them being lost overboard. Some of the containers fell into the sea during the impact.

Coast guards reported no sign of trouble before the collision and that no radio message had been taken from either vessel.

[container ship, passenger ship, collision, fire - consequence, near miss, spill, damage to equipment, cyanide product]

Lessons

[None Reported]
Source: HAZARDOUS CARGO BULLETIN, NOVEMBER 1999.
Location: Evansville, Indiana, USA
Injured: 0    Dead: 0

Abstract
A rail transportation incident. Eleven cars of a freight train derailed causing one car containing phosphoric acid to overturn. No leak occurred. The tank car was later lifted onto the flat.

Lessons
[None Reported]
Location: INDONESIA
Injured: 0  Dead: 10

Abstract
A marine transportation incident. An oil tanker collided with a tug boat in a thick haze. The incident occurred in low visibility. Oil leaked from the tanker and caught fire engulfing a nearby cargo ship. Ten of the tanker's crew died. It is thought that the thick haze is caused by farmers, plantations and timber firms clearing forest areas at the start of the dry season.
[collision, weather effects, human causes, fire - consequence, fatality]

Lessons
[None Reported]
Abstract
A rail transportation incident. A chemical tanker of a freight train derailed spilling flammable liquid for about eight hours before clean-up crews contained the leak. All but six cars that jumped the tracks were empty. The cars that derailed contained talc, liquefied petroleum gas, petroleum distillates and plastic pellets. The leaking car carried approximately 18,000 gallons of petroleum distillates, it was not immediately known how much had been spilled. A small grass fire started after the derailment but was quickly extinguished. The cause of the derailment was being investigated.

Lessons
Distillates are petroleum liquids, such as kerosene, that are produced during the oil distillation process.
Abstract
A marine transportation incident. A marine tanker spilled approximately 80,000 litres of light crude oil into a harbour, releasing a cloud of acrid fumes over a city. Emergency crews fought to contain the spill, the bulk of the oil was contained behind booms. An number of birds have been found coated with oil, and dead fish have been washed up on the shore. It is thought the cause of the spill was due to an open valve while the ship was discharging.

[gas / vapour release, ecological damage, unloading, operation inadequate]

Lessons
[None Reported]
A rail transportation incident. An express train collided with a mail train head on killing at least 250 people and injuring at least 1000. Explosions were heard and initially a bomb attack was suspected, but investigations found that both trains ended up on the same track after a signal failure. One of the trains was carrying explosives in a military compartment which may have caused the trains to catch fire after the crash. The engine of the express train was blasted into the air by the impact of the explosion.

Lessons

(None Reported)
Abstract
A rail transportation incident. Eleven cars of a train derailed onto their sides forcing the evacuation of the area. The train carrying 122 cars, including one containing chromium trioxide, a highly combustible substance when mixed with water and toxic if inhaled. Fortunately, the car remained on the tracks. No one was injured. The cause is under investigation.

Lessons
[None Reported]
Abstract
A rail transportation incident. A passenger train derailed as it approached a station. Three cars came off the tracks when the train collided into another train it was attempting to couple up to. Sixteen people were injured in the incident. The derailed cars included two passenger cars and a café car. The cause of the incident is not known.

Lessons
[None Reported]
Abstract
A rail transportation incident. Two of twenty six cars derailed from a freight train spilling dentured alcohol. Half of a nearby town was evacuated as fire crews and a specialist team worked to contain the spill.

derailed, evacuation

Lessons
[None Reported]
Source: HAZARDOUS CARGO BULLETIN, SEPTEMBER 1999.
Injured: 0  Dead: 0

Abstract
A marine transportation incident. A fire occurred aboard a container ship. The fire started in a hypochlorite box and then spread to 100 other boxes. The crew had to abandon ship.
[fire - consequence, evacuation]

Lessons
[None Reported]
Source: HAZARDOUS CARGO BULLETIN, SEPTEMBER 1999.
Location: , SWEDEN
Injured: 0  Dead: 0

Abstract
A marine transportation incident. A passenger/ro-ro ferry spilt approximately 3,000 l fuel at port during bunkering. Fire crews contained the spill with booms.

Lessons
[None Reported]
Abstract
A rail transportation incident. Two freight trains collided head on at low speed. Over 37,000 l of diesel was spilled when more than a dozen engines and cars derailed.

Lessons
[None Reported]
Source: HAZARDOUS CARGO BULLETIN, SEPTEMBER 1999.
Location: Texas, USA
Injured: 20  Dead: 0

Abstract
A road transportation and rail transportation incident. A road tanker carrying oilfield waste was hit by a train on a crossing causing two engines and seven freight cars to derail. Twenty people were injured.
[collision, derailment - consequence, injury]

Lessons
[None Reported]
Abstract
A road transportation incident. A road tanker overturned spilling approximately 5,000 litres of red diesel fuel into a nearby stream. The driver of the tanker was seriously injured in the incident and an investigation is being carried out into the cause of the incident. The company of the vehicle was fined £250 and costs of £255 (2000).

Lessons
All vehicles for transporting fuel must be properly maintained at all times to guard against pollution of the environment.
A marine transportation incident. A bulk carrier sank after colliding with a tanker in ballast. Damage occurred to the tanker. Bunkers leaked potash fertiliser from the bulk carrier. None toxic.

[Lessons]

[None Reported]
Abstract
A marine transportation incident. A bulk carrier spilt 750 l fuel oil while loading from a bulk barge. Skimmers and booms failed to stop the slick from moving upriver.

Lessons
[None Reported]
Abstract
A rail transportation incident. Thousands of gallons of latex spilled into a river when several cars of a train derailed. The cause of the incident is thought to have been due to hot weather buckling the rails.
[derailment - consequence]

Lessons
[None Reported]
Abstract
A rail transportation incident. Eight tank cars containing oil derailed. At least two cars spilled oil. The cause is not known.

Lessons
[None Reported]
Abstract
A marine transportation incident. A cargo ship ran aground while docking at a port. Some diesel fuel was spilt. Divers checked for leaks before lightering fuel to barges.

Lessons
[None Reported]
An explosion occurred on an oil pipeline killing 15 people. Approximately 100 m³ unspecified fuel was lost.

Lessons

[None Reported]
A crude export line was bombed causing oil to leak. A fire ensued.

Lessons

[None Reported]
A marine transportation incident. A marine tanker was found to have a leak in its hull whilst being docked at a refinery. Temporary repairs were carried out before setting sale for its destination.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>HAZARDOUS CARGO BULLETIN, SEPTEMBER 1999.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Bashkortostan, RUSSIA</td>
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<tr>
<td>Injured</td>
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</tr>
<tr>
<td>Dead</td>
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</table>

**Abstract**

A rupture occurred on a main oil line. More than 400 tonnes of oil spilled into a near-by river. A response team was brought in to deal with the spill.

[material transfer, pipeline, crude oil]

**Lessons**

[None Reported]
Abstract
A leak occurred on a pipeline releasing vapours over a nearby creek. The vapours ignited causing a fireball which killed three people. Approximately 1,100 m$^3$ of gasoline was spilt into the creek.

Lessons
[None Reported]

Disclaimer: The Chemical Incident Reports Center (CIRC) is an information service provided by the U.S. Chemical Safety and Hazard Investigation Board (CSB). Users of this service should note that the contents of the CIRC are not intended to be a comprehensive listing of all incidents that have occurred; many incidents go unreported or are not entered into the database. Therefore, it is not appropriate to use the CIRC database to perform statistical analysis that extends conclusions beyond the content of the CIRC. Also, although the CSB never knowingly posts inaccurate information, the CSB is unable to independently verify all information that it receives from its various sources, much of which is based on initial reports. CIRC users should also note that the CSB receives more comprehensive reports about incidents that occur in the U.S.; comparisons made between U.S. incidents and those in other nations should take this fact into consideration.


Location: Bellingham, USA

Injured: 0  Dead: 3

Abstract
Approximately 277,000 gallons of fuel spilled from a ruptured pipeline killing three people. Nearby residents were evacuated and other parts of the area were asked to conserve water after a pump station was damaged in the fire and explosion.

The pipeline was later tested. During the first test the pipeline ruptured and spilled 10,000 gallons of water. Further testing was carried out and all defects were found and repaired.

It is thought that the company will apparently be fined an estimated $3.05 million (2000), the largest fine ever sought against a pipeline operator.

[fire - consequence, evacuation, fatality, material of construction failure]

Lessons
[None Reported]
Source: HAZARDOUS CARGO BULLETIN, SEPTEMBER 1999.
Location: Pambla, AUSTRALIA
Injured: 1  Dead: 0

Abstract
A road transportation incident. A fire occurred when a road tanker overturned spilling 38,000 l of diesel and gasoline into a river. Fire crews extinguished the blaze and booms were used on the river.

Lessons
[None Reported]
Location: NIGERIA
Injured: 0    Dead: 15

Abstract
Fifteen people were burned to death by a blazing fuel from a ruptured oil pipeline. The fire broke out after the pipeline was deliberately punctured to enable people to drain off fuel.
More than one hundred thousand litres of oil spilled out.
[fatality, burns, deliberate acts]

Lessons
[None Reported]
Source: HAZARDOUS CARGO BULLETIN, SEPTEMBER 1999.
Location: , NETHERLANDS
Injured: 0    Dead: 0

Abstract
A marine transportation incident. A lighter carrying 3,150 tonnes of crude oil ran aground. The vessel was re-floated and was found to have sustained severe damage to the bottom plates, no spillage occurred.

Lessons
[None Reported]
Injured: 50  Dead: 5

Abstract
A road transportation incident. A fire broke out in a busy motorway tunnel. The accident occurred when a lorry caught fire after colliding with a car at the northern entrance. This was followed by a series of explosions which spread the fire to other vehicles. The tunnel then filled with smoke, hampering the rescue effort and causing confusion both inside the tunnel and outside.
Up to sixty vehicles were involved in the accident.

Lessons
The crash prompted immediate calls for parallel escape routes to be built.
Abstract
An explosion and fire occurred on an oil pipeline. The pipeline carries one hundred and seventy thousand barrels of oil a day. The explosion occurred along a section which runs through territory of a fiercely independent tribe.

Lessons
[None Reported]
Abstract
An explosion and fire occurred on a gas pipeline injuring 70 workers, 30 seriously, but causing no major damage. The blast occurred whilst workers were repairing the pipeline. The injured workers suffered burns.
It is thought that the cause of the explosion was due to a gas leak.

Lessons
[None Reported]
Location: Pakistan, SOUTH ASIA
Injured: 50+  Dead: 40+

Abstract
A road transportation incident. At least 40 people were burnt to death when a petrol tanker caught fire after overturning on a highway. Hundreds of villagers gathered around the vehicle to collect the leaking fuel, before it caught fire, engulfing people in the flames. More than 50 victims were taken to hospital with serious burns.

[road tanker, fire - consequence, gasoline]

Lessons
[None Reported]
Abstract
A marine transportation incident. A lighter carrying 2,050 tonnes of kerosene ran aground. The vessel was refloated and was found to be leaking from its cargo tanks.

Lessons
[None Reported]
Abstract
A rail transportation incident. An elevated passenger train derailed and plunged into a river killing 2 people and injuring 52. The train apparently hit a platform left by track workers.
The train fell approximately 30 feet into the water, rescue officials pulled victims from water about 2 feet deep.
Lessons
[None Reported]
Abstract
A road transportation incident. A fatal collision between two semi-trucks disrupted traffic on the westbound lanes of an interstate in Central Iowa for nearly 12 hours. The driver of one semi was killed when his truck slammed into the rear of another semi. The second truck began to burn when oil in the chocolate it was carrying caught fire. The accident closed down a ten-mile stretch of the interstate until the road was re-opened the next day.

Lessons
[None Reported]
Abstract
A road transportation incident. A fire broke out on board a food truck carrying flour and margarine whilst being driven through a tunnel linking France and Italy. At least 30 people are reported to have been killed. Thick smoke trapped about 30 people inside the tunnel, they sought refuge in an emergency tunnel and were later evacuated. The driver of the truck was unhurt.

Lessons
[None Reported]
A rail transportation incident. A train hauling auto parts collided with a freight train at an intersection, flinging boxcars off the tracks. Fortunately the crew on the trains suffered only minor injuries.

Police began to evacuate the nearby town but stopped after it was determined that no hazardous materials had been spilled and that there was no danger of an explosion from spilled diesel.

However, there was concern that fuel spilled into the nearby creek would reach the nearby river, a source of drinking water for 80,000 people in the area. A supply of sand was used to dam the creek and contain the spilled oil.

Apparently both trains were moving considerably slower than the 50 miles per hour limit allowed at the intersection at the time of the incident. Investigations are under way as to the cause of the incident.

Lessons

[None Reported]
Abstract
A marine transportation incident. A marine tanker carrying flammable chemical fluids caught fire off the northern coast of Scotland, rousing fears of an ecological disaster.
Some 200 residents of two tiny villages were evacuated as the vessel caught fire and drifted just off the rocky coastline.
The tanker was carrying 1,750 tonnes of potentially explosive vinyl acetate which is used in the manufacturing of paints and adhesives, 76 tonnes of bunker fuel and 20 tonnes of fuel oil.
The engine room was sealed and power shut down when the fire was first reported, causing the 102 metre vessel to drift in high winds and stormy seas before being stopped by its anchor less than half a mile from the coastline. The ships captain stayed on board for three more hours, whilst the rest of the crew were airlifted to safety, to set up tow lines, drop anchor and flood the compartment separating the fire from the explosive cargo. The vessel was eventually towed to a safe haven and the fire was successfully put out.

Lessons
[None Reported]
A rail transportation incident. A passenger train derailed when it collided with a road truck on a crossing. Several carriages derailed and burst into flames after the train crashed into the tractor trailer, which was carrying a heavy load of steel. More than 200 passengers were on the train. Investigations are being made into whether the gates and lights at the crossing were working at the time of the incident.

[derailment - consequence, collision, road transport, fire - consequence, explosion, fatality]

Lessons

[None Reported]
Abstract
A rail transportation and road transportation incident. A collision between a passenger train and a road truck occurred on a railroad crossing, killing 11 passengers and injuring 122. The crash derailed several cars behind the locomotives. Many of the dead were in a sleeping car which was totally destroyed by a diesel fire. It is not yet known the exact cause of the incident.
The crash caused more than £14 million (1999) in damage.

Lessons
[None Reported]
Abstract
A marine transportation incident. A 640 foot cargo ship carrying 400,000 gallons of fuel dragged anchor while waiting out a storm to pick up a load of woodchips. The cargo ship subsequently ran aground.
After constant battering by the pounding surf the ship began to leak.
Plans to pull the whole ship off the beach were scrapped, instead it was decided to burn the fuel oil to prevent anymore spillage.
Attempts to burn off the fuel were partially successful, but disaster struck when the ship broke in half, spilling 70,000 gallons.

Lessons
[None Reported]
Abstract
A marine transportation incident. Eleven crewmembers were lifted off an oil rig supply vessel which caught fire 180 miles south of the Scilly Isles. The fire started in the engine room and is believed to have been put out by the ship's carbon dioxide system.

Lessons
[None Reported]
Abstract
A road transportation incident. A lorry carrying a skip loaded with car batteries was stopped by police when clear liquid had been seen escaping from the back of the vehicle.
It was found that the liquid was battery acid, which was leaking from the skip.
A sample of the liquid pouring from the skip showed it to be highly acidic, with a pH value of less than 1. The company was fined £7,000 and costs of £1,1865 (2000).

Lessons
[None Reported]
Abstract
A river transportation incident. An oil spill occurred when two ships collided. One of the ships, an oil tanker, was carrying approximately 30,000 tonnes of crude oil the other was carrying cargo.

Lessons
[None Reported]
Abstract
An air transportation incident. A military refuelling plane carrying 18,000 litres of fuel burst into flames upon crashing in a wooded area near a Dutch border, killing all four crew members.

It took more than 100 fire fighters approximately three hours to extinguish the burning plane.

[fire - consequence, explosion, aviation fuel, fatality]

Lessons
[None Reported]
Abstract
A rail transportation incident. A train derailed after colliding with a grain truck which had gone through red lights of a railroad crossing.
[derailment - consequence, collision, human causes]

Lessons
[None Reported]
A road transportation incident. Fifty people died when an overcrowded bus hit an oil tanker. The petrol from the tanker caught fire, causing an explosion. Two of the six people who managed to escape from the bus by jumping through the rear door were injured.

The oil tanker driver sustained burn injuries.

[road tanker, fire - consequence, fatality, burns, collision, gasoline, injury]

Lessons

[None Reported]
A power failure caused severe disruption at the height of rush hour, stalling numerous overland and subway trains. The power failure also caused traffic chaos and led to the suspension of flights into the international airport. The problem was eventually traced back to a power station where a construction crew interrupted a main electricity line. Workers adjusted several 115-kilovolt lines turned power on without proper grounding (earthing), this caused a chain reaction, shutting down other power stations, pulling the plug on most of the city and its southern suburbs.

Lessons
[None Reported]
Source: 1998 CABLE NEWS NETWORK.
Location: , INDIA
Injured: 260  Dead: 192+

Abstract
A rail transportation incident. A passenger train derailed when it collided with a mail train minutes after it had jumped the tracks. A total of 1,700 passengers were aboard both trains. In all 16 cars were damaged in the incident.

Lessons
None Reported
Abstract
A marine transportation incident. Two oil tankers collided causing a major oil slick. There are fears the spillage will pose a serious threat to marine life in the area, including the endangered white dolphin. The diesel oil poured into an area near the mouth of a river. Both the tankers were carrying thousands of tonnes of oil. Two tanks on one vessel were badly damaged, each with a capacity of 1,000 tonnes of oil. The oil formed a slick reported to be about 10km long and five metres to 50 metres wide.
[collision, spill, environmental, damage to equipment]

Lessons
[None Reported]
Abstract
A marine transportation incident. Two oil tankers collided causing a major oil slick. There are fears the spillage will pose a serious threat to marine life in the area, including the endangered white dolphin. The diesel oil poured into an area near the mouth of a river. Both the tankers were carrying thousands of tonnes of oil. Two tanks on one vessel were badly damaged, each with a capacity of 1,000 tonnes of oil. The oil formed a slick reported to be about 10km long and five metres to 50 metres wide.

Lessons
[None Reported]
A rail transportation incident. A passenger train derailed when it collided with a mail train minutes after it had jumped the tracks. A total of 1,700 passengers were aboard both trains. In all 16 cars were damaged in the incident.

Lessons

[None Reported]
Abstract
A fire and explosion occurred on a ruptured pipeline. Local people were scooping up the leaking fuel from the pipeline when there was an explosion. It is thought that ignition was caused by a spark from either a cigarette or a motorbike engine. Many of the victims had become saturated by fuel.

[burns, fatality, fracture, transportation]

Lessons
[None Reported]
Abstract
A rail transportation incident. Approximately 200 people were evacuated when a train carrying hazardous chemicals derailed at the edge of a nearby national forest.
Toxic sulphuric and caustic sodium hydroxide leaked from two of the four tankers which overturned.

Lessons
If inhaled, sulphuric acid can cause respiratory problems or skin, eye and ear irritation. In greater concentrations, exposure could be deadly.
Abstract
A rail transportation incident. A train derailed as it pulled into the siding of a station and crashed through a barricade and into the nearby town square, killing 47 and injuring 104 people.
An investigation into the cause incident found a faulty brake system.

Lessons
[None Reported]
A road transportation incident. Eight people were treated at hospital in blood spill scare after more than 50 gallons of cows' blood leaked from a tanker onto a motorway.
Tests on the blood revealed no BSE contamination.
The remains of the tanker's cargo was transferred to another tanker and transported to an incinerator to be destroyed.
The cause of the incident is thought to have been valve failure.

Lessons

[None Reported]
**Source:** YAHOO NEWS, THE ASSOCIATED PRESS, 18 SEP, 1998.

**Location:** New York, USA

**Injured:** 0  **Dead:** 0

### Abstract
A rail transportation incident. Double stacked cars of a 125-car freight train struck an overpass and derailed, knocking out a rail line shortly before tens of thousands of commuters headed for their trains. One or two of the cars apparently were filled too high with empty containers when they struck the overpass.

### Lessons
[None Reported]
Abstract
A rail transportation incident. A rail car carrying 66,000 gallons of hydrochloric acid began leaking, releasing a vapour cloud of deadly fumes causing injury to one. A diluted form of highly corrosive acid, with a concentration of 28 percent, began leaking on to the rail bed and caused a small vapour cloud to form. One man working in the rail yard was taken to a local hospital. 100 to 150 people from two nearby light manufacturing buildings were evacuated and part of a six-lane highway was closed as hazardous materials units tried to patch the hole. An almost windless morning and heavy rains helped toward the quick shrinking of the vapour cloud.

[gas / vapour release, evacuation, injury]

Lessons
[None Reported]
Abstract
A road transportation incident. Several litres of nitric acid leaked from a tanker when travelling towards a nearby lake. Nitric acid is easily soluble in water and the amount is fairly small, so environmental damage is unlikely.

Lessons
[None Reported]
Abstract
Approximately 213,000 litres of fuel was lost over a period of eight months from an underground pipeline resulting in groundwater pollution. Two companies involved were fined, one £125,000 and the other £125,000, both companies split costs of £25,000 (2000).

Lessons
[None Reported]
Abstract
A rail transportation incident. A high speed train crash killed 102 people. Evidence suggests that a wheel that might have broken from material fatigue could have caused the carriage directly behind the locomotive to derail. Parts of a broken wheel were found some six kilometres (four miles) ahead of the bridge. The train is believed to have derailed at a switch 300 metres (yards) before the bridge. The locomotive uncoupled from the train, which then hurtled into a road bridge as the cars behind jack-knifed into one another. The road bridge collapsed on several cars, crushing the passengers inside.

Lessons
[None Reported]
Abstract

A rail transportation incident. A high speed train crash killed 102 people. Evidence suggests that a wheel that might have broken from material fatigue could have caused the carriage directly behind the locomotive to derail. Parts of a broken wheel were found some six kilometres (four miles) ahead of the bridge. The train is believed to have derailed at a switch 300 metres (yards) before the bridge.

The locomotive uncoupled from the train, which then hurtled into a road bridge as the cars behind jack-knifed into one another. The road bridge collapsed on several cars, crushing the passengers inside.

Lessons

[None Reported]
A marine transportation incident. A fire occurred onboard a ship when diesel fuel leaked from a burst flexible hose onto a hot engine component in the main machinery space. Four people were killed in the incident.

[fire - consequence, hose failure, hot surface, fatality]

Lessons

[None Reported]
A road transportation incident. More than 70 people were taken to hospital with suspected cyanide poisoning, after nearly 2,000 kg of the chemical spilled into a river.

An emergency committee was set up to cope with the disaster as several hundred other people complained of feeling unwell. Around four thousand people were evacuated from the nearby village.

The sodium cyanide was being transported in cylinders to a gold mine when a truck carrying it crashed spilling its cargo.

The cyanide leaked into the river, which feeds the country's largest lake.

Sodium cyanide is used extensively in Central Asia as a separating agent in gold mines.

Lessons

[None Reported]
Abstract
A pipeline rupture caused approximately 30,000 of gasoline of which 17,000 gallons were recovered. The incident occurred on a 40-inch diameter steel pipeline, which ran through a landfill site. An employee at the site detected the odour of gasoline flowing up through the ground in the vicinity of the site and immediately reported the leak to the pipeline owner. The pipeline was subsequently shutdown. An investigation into the leak found that the pipeline had buckled and cracked. It is thought that the stress damage was due to soil settlement underneath the pipe. Clean-up costs exceeded $3.2 (1998).
[material of construction failure, spill, design or procedure error]

Lessons
[None Reported]
Abstract
An oil pipeline explosion. The explosion followed an oil leak and sent a ball of flames through a nearby community, destroying many houses and spilling oil into a nearby river.
Many people threw themselves into the river as a huge fireball made its way down the pipeline. Around 70 people were injured, some with severe burns. It took more than five hours to bring the blaze under control. Rescue efforts were hampered by water shortages. About 500 people were evacuated to a military base nearby and were not allowed to return to their homes until the pipeline was declared safe.

Lessons
[None Reported]
A company was fined £70,000 (1998) for an oil leak from a pipeline at its nuclear power station. Polluting matter was spilt into controlled waters. Oil had seeped into a shingle aquifer used to provide drinking water. Four boreholes were closed as a precaution. Over 80,000 litres of the total spillage of 190,000 has been recovered.

Lessons
[None Reported]
Abstract
A transportation incident. A freighter ship, a bulk carrier, sank due to rough seas. A garbled mayday from the ship was picked up about 5 am by a coast guard station nearby. A helicopter was sent out and rescued four crewmembers.

Lessons
[None Reported]
Abstract
A marine transportation incident. Approximately 4,000 tonnes of fuel oil is thought to have leaked from a marine barge which sank off the north coast in high winds.
Mangrove swamps in the area were threatened by the oil spill. The trees were grown by a marine research centre to provide a habitat for shrimps and small fish.

Lessons
[None Reported]
Abstract
A marine transportation incident. Boats and helicopters were mobilised to help clean-up a 40,000 oil spill of the south-eastern coast of Nigeria. The 40,000 barrel spill is thought to have been the largest spill in Nigeria for several years. Helicopters, fixed-wing aircraft and boats were mobilised to help monitor and clean-up the oil.

Fish suffocate when oil gets into their gills, and some protected birds may suffer because they rely on the fish for their food.

Lessons
[None Reported]
A liquefied nitrogen pipeline exploded in a fertiliser plant. About 60 workers were on night shift during the incident.

Lessons

[None Reported]
Injured: 150  Dead: 0

Abstract
A rail transportation incident. More than 150 people suffered burns, 120 critically, after huge flames swept through a crowd of people following the collision of two petroleum tanker trains.
Most of the people were soaked in petrol because, prior to the explosion, they were carrying buckets laden with petrol to and from their houses. Some witnesses suggested the source of ignition was a cigarette from one of the crowd.
The cause of the collision of the two trains is not immediately clear.

Lessons
[None Reported]
A rail transportation incident. A train carrying more than 1,000 tonnes of coal derailed. Fourteen wagons left the track, blocking the main east coast railway line and causing major disruption to passenger services for four days. No one was injured. A fault in the track is thought to have been the main reason for the accident.

[derailment - consequence, rail incidents]

Lessons

[None Reported]
<table>
<thead>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Location</td>
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<td>Injured</td>
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</table>

**Abstract**

A fire occurred whilst drillers obtaining soil samples ruptured a pipeline carrying natural gas. Nearby business were evacuated and the road was closed off.

[exploration, sampling, fire - consequence, evacuation, transportation]

**Lessons**

[None Reported]
A rail transportation incident. Around 1000 people were evacuated from their homes following a derailment of a freight train wagon carrying sixty tonnes liquid vinyl chloride monomer (VCM). The wagon was the last of nine being taken to the docks, when it derailed while going over manually operated points and turned on its side.

Although the wagon survived the impact intact and there was no leak, forty-eight fire fighters and twenty one employees were required to provide the necessary support during the operation to pump out the wagon.

The residents within a 300 m radius were evacuated as a precaution, during the decanting procedure in case of leakage, which was due to the flammable nature of VCM could have easily ignited.

The cause of the incident was due to human error.

[evacuation, human causes, derailment - consequence, spill]

Lessons

[None Reported]
Abstract
A rail transportation incident. A tank wagon containing vinyl chloride monomer (VCM) a liquefied gas derailed at low speed. Although the wagon came off the rails and turned on its side there was no leak of gas.

Lessons
[None Reported]
**Injured:** 2  **Dead:** 3

**Abstract**
An explosion and fire destroyed an LPG tank and nearby gas oil and fuel oil pipelines. Cigarettes and a bottle of wine were found at the site.

**Lessons**
[None Reported]
Abstract
A rail transportation incident. A freight train and passenger train collided injuring some one hundred people, two critically. Three tanker cars loaded with diesel exploded during the collision. Fire fighters took two hours to extinguish the flames, and prevented the fire from spreading to the remaining nineteen tanker cars on the freight train. The cause of the collision has not yet been identified.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>CANADA</td>
</tr>
<tr>
<td>Injured</td>
<td>0</td>
</tr>
<tr>
<td>Dead</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abstract**

A fire occurred when natural gas leaked from a 36 inch pipeline. Shutoff valves isolated the affected section and the gas fire burnt itself out. The fire also ignited a small secondary stubble fire in a nearby field. The cause of the line break is thought to have occurred due to corrosion.

[fire - consequence, transportation]

**Lessons**

[None Reported]
An explosion occurred on a crude oil pipeline, which led to a spill and subsequent ignition. It is thought the incident occurred due to a terrorist assault on the pipeline. Explosions occurred at three different locations, some 120 km apart. Three refineries were affected by the incident.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>COPYRIGHT 1996, THE DAILY IOWAN.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>USA</td>
</tr>
<tr>
<td>Injured</td>
<td>0</td>
</tr>
<tr>
<td>Dead</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abstract**

A rail transportation incident. A railroad train derailed due to striking a truck on a crossing spilling almost 100 tonnes of . All three locomotives and eight of the train's 53 car jumped the tracks. Warning lights on the crossing were working at the time of the derailment.

**Lessons**

[None Reported]
Abstract
A 24 inch natural gas pipeline was punctured by a maintenance work crew. The damaged section was closed down and repairs initiated. Flow was curtailed for a day.

Lessons
[None Reported]
A marine transportation incident. Two marine tankers collided spilling 29,000 tonne of fuel oil into the sea. 51 anti-pollution craft were involved in cleanup.

Lessons
[None Reported]
Abstract
A marine transportation incident. 800-900 tonnes of palm oil leaked from a tank following a collision with a cargo ship in fog.

Lessons
[None Reported]
1139329 September 1997

Source: "LOSS CONTROL NEWSLETTER, 1997."
Location: , USA
Injured: 0  Dead: 0

Abstract
A crack occurred in a flange on an undersea pipeline, which led to a spillage of 30 tonnes of crude oil. The line was shutdown when the leak was detected. The spillage was contained.
[environmental, transportation]

Lessons
[None Reported]
Abstract
A marine transportation incident. A bulk carrier sank following a collision with an OBO carrier.

Lessons
[None Reported]
A marine transportation incident. A collision between a laden ship and an oil/chemical tanker occurred, there was no cargo spill and no injuries.

Lessons

[None Reported]
Abstract
A marine transportation incident. A ro-ro ship with 27 people on board grounded and took on water, cargo of water sensitive ferrosilicon was made secure.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>HAZARDOUS CARGO BULLETIN, 1997, NOV. UPI.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>New York, USA</td>
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<tr>
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<tr>
<td>Dead</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abstract**

A rail transportation incident. Forty cars of a 95 car train, including a tank car carrying sulphuric acid derailed, the tank car leaked from the top dome.

**Lessons**

[None Reported]
Abstract
An air transportation incident. A fighter plane carrying 5,000kg of fuel broke up and crashed while performing at an air show. The explosion destroyed several buildings. The pilot ejected. No fatalities.

Lessons
[None Reported]
Abstract
A marine transportation incident. Engine trouble occurred on a laden LPG tanker causing it to be grounded in a waterway.

Lessons
[None Reported]
Source: HAZARDOUS CARGO BULLETIN, 1997, NOV. REUTER.
Location: , TAIWAN
Injured: 0  Dead: 0

Abstract
An explosion occurred on a gas pipeline which was accidentally ruptured by workers. The leaking gas ignited by sparks from passing motorcycles.

Lessons
[None Reported]
Abstract
A marine transportation incident. A utility tug towing a barge struck a brightly lit oil platform in clear weather, minor damage occurred.

Lessons
[None Reported]
Abstract
A road transportation and rail transportation incident. A road tanker burst into flames after being struck by a passenger train at a railway crossing. 10 people were killed and 16 injured, a fire then spread to nearby buildings.

Lessons
[None Reported]
Abstract
A leak on a pipeline caused over 700 tonnes of oil to leak into two rivers, three rows of booms were used. Polluted area covering 11 hectares.

Lessons
[None Reported]
Abstract
A rail transportation incident. A railway maintenance company is facing a charge of negligence following an accident in which a quarter of a mile of track was destroyed and lines were disrupted for several days.
The accident occurred in September 1997, when the maintenance company was rectifying track that had become waterlogged through drainage problems. A 21 wagon freight train was partly derailed and eight wagons hit a bridge, showering bricks onto a road.
The company was accused of having failed to maintain a safe method of repairing the track and of failing to ensure that rail passengers were not exposed to the risk of injury.

Lessons
[None Reported]
Abstract
A fire occurred on a spilling several million litres of gasoline. Fire fighters battled blaze for three days, the spill was possibly due to vandalism.

[fire - consequence, transportation]

Lessons
[None Reported]
A 16-inch subterranean pipeline was being cleared ready for decommissioning when a large quantity of oil was noticed to be floating on the surface of a creek. The incident occurred when using a method, which would force any residual oil out at low pressure, allowing the pipe to then be flushed with seawater. No booms or pollution prevention measures had been deployed. The company was fined £7,500 and costs of £5,438.

Lessons

[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>HAZARDOUS CARGO BULLETIN, 1997, SEP. LLOYDS LIST.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>MALACCA STRAITS</td>
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<tr>
<td>Injured</td>
<td>0</td>
</tr>
<tr>
<td>Dead</td>
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</tbody>
</table>

**Abstract**

A marine transportation incident. A marine tanker collided with a bulk carrier causing a No.2 port side tank to be holed and 150 tonnes of fuel oil spilled, consequential widespread pollution occurred.

**Lessons**

[None Reported]
An air transportation incident. An aircraft carrier spilled 35,000 litres of oil due to fuel being discharged instead of ballast water, oil booms were set up to contain spill.

Lessons

[None Reported]
Abstract
A marine transportation incident. An anchored cargo ship laden with 4,200 tonnes of sulphur took on water in high winds causing the engines to fail and the ship to sink. All crew rescued.

[weather effects, sinking]

Lessons
[None Reported]
Abstract
A marine transportation incident. A bulk carrier laden with iron ore was in collision with a sea mount, severe keel damage occurred, fortunately there was no pollution.

Lessons
[None Reported]
Abstract
An air transportation incident. A cargo plane carrying hazardous materials crash landed at an airport, the aircraft was apparently on fire before landing. All crew escaped.

[fire - consequence, chemicals unknown]

Lessons
[None Reported]
Source: HAZARDOUS CARGO BULLETIN, 1997, SEP. LLOYDS LIST.
Location: OFF SINGAPORE
Injured: 0  Dead: 0

Abstract
A marine transportation incident. A container ship sustained serious damage when in collision with a laden tanker, no pollution occurred.
[damage to equipment]

Lessons
[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>HAZARDOUS CARGO BULLETIN, 1997, SEP. LLOYDS LIST.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
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<td>Injured</td>
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</tr>
<tr>
<td>Dead</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abstract**

A marine transportation incident. An anchored chemiship awaiting pilot was struck by a bulk carrier damaging the bow, fortunately no pollution occurred.

Illustration of damage to equipment, collision, near miss

**Lessons**

[None Reported]
Abstract
A gas pipeline exploded and touched off a fire, destroying six houses and damaging 50 others in an affluent subdivision. Construction workers using a backhoe apparently punctured the gas 20 inch main and left 10 to 15 minutes before the explosion. One person suffered burns.

Lessons
[None Reported]
A rail transportation incident. Demolition experts blew up two tank cars of chloroprene following derailment of a train due to a buckled track, 6000 residents were evacuated prior to a controlled blast.

Lessons

[None Reported]
Abstract
A marine transportation. A supply vessel towing an oil barge struck and fractured piles, 40 bbls of oil spilt. Cleanup crews contained the spill.

Lessons
[None Reported]
Abstract
A marine transportation incident. An explosion and fire occurred in the engine room of a chemship with 9,000 tonnes of naphtha onboard.

Lessons
[None Reported]
Abstract
A marine transportation incident. A barge carrying 5,000 tonnes of diesel hit breakwater after towrope snapped, 2,500 tonnes spilled.

Lessons
[None Reported]
Source: HAZARDOUS CARGO BULLETIN, 1997, SEP. REUTER.
Location: BRAZIL
Injured: 0  Dead: 1

Abstract
Air transportation incident. An explosion occurred aboard a passenger plane ripping a 2m gash in the fuselage through which a passenger was killed. Unidentified chemicals thought to be the cause.
[fatality, chemical causes, unknown chemicals]

Lessons
[None Reported]
A marine transportation incident. A marine tanker carrying 27,000 tonnes of gasoline grounded. Two tugs were used to pull the vessel clear, averting a possible ecological disaster.

Lessons
[None Reported]
A spillage of crude oil occurred due to an attack on a pipeline, which caused it to rupture. The crude oil field which serves the pipeline was shut down until repairs were carried out.

Lessons

[None Reported]
Abstract
A rail transportation. A poorly secured pipe, 1.2m diameter, 15m long, weighing 6 tonnes broke loose from a freight train slicing open a passing passenger train.

Lessons
[None Reported]
Location: Valencia, SPAIN
Injured: 0   Dead: 18

Abstract
A marine transportation incident. A fire occurred onboard a tanker whilst under construction in a shipyard. A welding spark allegedly ignited diesel fuel being pumped aboard.

Lessons
[None Reported]
Abstract
A marine transportation incident. A double hull tanker with 257,000 tonnes of crude oil, grounded in calm seas. The vessel was refloated but 1,300 tonnes of oil escaped through a damaged bottom plating.

Lessons
[None Reported]
Source : HAZARDOUS CARGO BULLETIN, 1997, AUG.
Location : Kansas, USA
Injured : 1  Dead : 1

Abstract
A rail transportation incident. A train carrying hazardous materials unable to stop at a crossing, crashed into another train, a fire then occurred. 1,000 evacuated.

[fire - consequence, collision, evacuation, fatality, chemicals unknown]

Lessons
[None Reported]
Abstract
A marine transportation incident. A super tanker carrying 76 million gallons of light crude oil spilled 390,000 gallons into the nearby bay. The tanker strayed from an established shipping lane while trying to avoid other vessels and became caught in strong tides. The tanker scraped a reef just inside the bay, gashing its hull.

The spill covered one-sixth of the 15 mile wide and 35 mile long bay. Some 300 coast guard and navy ships, along with dozens of private fishing boats were mobilised for the clean up.

The spill struck during the harvest time of short necked clams and sea bass.

Lessons
Benzene and other chemical compound in crude is harmful to marine life.
Abstract
A gas pipeline exploded causing a fire which destroyed four houses killing one person. Construction workers apparently punctured the gas main, they left the area ten to fifteen minutes before the explosion which caused flames to burn out of control for more than half an hour.
[transportation, human causes, fatality]

Lessons
[None Reported]
Source: HAZARDOUS CARGO BULLETIN, 1997, AUG. REUTER.
Location: Texas, USA
Injured: 0  Dead: 2

Abstract
A marine transportation incident. Two crew were found dead in a partially filled tank on a chemical ship, protective clothing inadequate. [safety procedures inadequate, fatality]

Lessons
[None Reported]
Abstract
A fire on the crude oil pipeline was started during repair and maintenance work and was probably caused by the failure or misuse of welding equipment. The oil leaking from the damaged pipe was channelled into a special reservoir dug into the ground. The fire was extinguished in 2 days.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>CHEMICAL HAZARDS IN INDUSTRY, 1997, NOV.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>USA</td>
</tr>
<tr>
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<td>1</td>
</tr>
<tr>
<td>Dead</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abstract**

A road transportation incident. A tank truck hauling 6400 gal of toluene crashed into a utility pole in a small town. An estimated 200 gal of the cargo spilled, but because the material is highly flammable and live utility lines had been downed in the incident about 300 residents were evacuated. There was no fire and residents were allowed to return to their homes the next day. The driver was treated at a local hospital.

**Lessons**

[None Reported]
**Source:** HAZARDOUS CARGO BULLETIN, 1997, AUG. REUTER.  
**Location:** INDIA  
**Injured:** 0  
**Dead:** 24

### Abstract
A marine transportation incident. A bulker with 12,700 tonnes of sulphur and 200 tonnes of fuel/diesel oil on board sank in rough seas, nine of the crew were rescued.

### Lessons
[None Reported]
Abstract
A river transportation incident. A cargo ship carrying 5,700 tones of steel, collided with a tug and sank causing a spill of fuel oil which polluted river banks.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Location</td>
<td>BELARUS</td>
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<tr>
<td>Injured</td>
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</tr>
<tr>
<td>Dead</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abstract**

Pollution occurred over 70 hectares of marshland when 500 tonnes of crude oil spilled due to the rupture of a nearby pipeline. The damaged section has been blocked off and work is being carried out to pump out the spillage of oil.

**Lessons**

[None Reported]
**Source:** HAZARDOUS CARGO BULLETIN, 1997, AUG. LLOYDS LIST  
**Location:** , SOUTH AFRICA  
**Injured:** 0  
**Dead:** 0

<table>
<thead>
<tr>
<th>Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>A marine transportation incident. A cargo ship carrying 4,000 tonnes of fishmeal, lost power and sank in very heavy seas, 20 crew members were rescued.</td>
</tr>
</tbody>
</table>

| [sinking, weather effects] |

<table>
<thead>
<tr>
<th>Lessons</th>
</tr>
</thead>
<tbody>
<tr>
<td>[None Reported]</td>
</tr>
</tbody>
</table>
A fire occurred in the holds of a cargo ship involving maize and sorghum. This was due to ignition of fumes of chemicals used earlier and poor ventilation.

Lessons

[None Reported]
Abstract
A rail transportation incident. A freight train carrying hazardous chemicals rammed into a coal train, two engines and 13 cars derailed and burst into flames, one person was killed and two injured.

Lessons
[None Reported]
Source: CHEMICAL HAZARDS IN INDUSTRY, 1997, NOV.

Injured: 2  Dead: 1

Abstract
A rail transportation incident. A transportation freight train carrying hazardous chemicals crashed into a coal train. The freight train burst into flames as its two engines and 13 of its cars derailed. Homes within a half-mile radius of the crash site were evacuated for 24 hours. One freight crew member was killed and two were injured but there were no injuries on the coal carrier.

Tank cars carrying bleach, sulphuric acid and ammonium nitrate were initially reported to be on fire at the scene. The sulphuric acid was transferred and a car partially loaded with hydrogen peroxide was removed.

A tank car carrying acetaldehyde continued burning through to the next day.

Lessons
[None Reported]
Source: HAZARDOUS CARGO BULLETIN, 1997, AUG. LLOYDS LIST.
Location: Lagos, NIGERIA
Injured: 0  Dead: 4

Abstract
A marine transportation incident. Two explosions occurred in the ballast of a chemical tanker at anchorage during welding caused by naphtha vapours. Considerable damage to the tanker occurred.

Lessons
[None Reported]
A marine transportation incident. An explosion occurred in a tank on a marine tanker the cause was due to welding operations during repairs on a "gas free ship" at anchorage.

[hot surface, fatality]

Lessons

[None Reported]
Abstract
500 tonnes of oil spilt from a pipeline, all of the oil was recovered and 8 meter length of line replaced. Agricultural land to be recultivated.

Lessons
[None Reported]
17 tonnes spilt into the Black Sea. Clean up operations involved removing 500 tonnes of contaminated earth. About 700 persons involved in the clean up operations.

[Lessons]

[None Reported]
Abstract
386 tonnes of oil was spilt when a pipeline burst over adjacent land and a main road, 13 tonnes escaped into the sea. 318 tonnes was collected in clean-up operations.

Lessons
[None Reported]
Abstract
A marine transportation incident. A tanker in ballast allegedly illegally discharged 8,500 t of dirty ballast water into a lake.
[environmental, human causes]

Lessons
[None Reported]
Injured: 3  Dead: 2

Abstract
A marine transportation incident. An explosion and fire occurred in the engine room of a tanker laden with crude oil.

Lessons
[None Reported]
Abstract
A rail transportation incident. A freight train carrying LPG residue and phosphoric acid derailed. Nineteen cars left the tracks, no spill occurred. Residents were evacuated and gas and electricity supplies were cut off.

Lessons
[None Reported]
Abstract
A marine transportation incident. An liquefied natural gas (LNG) carrier collided with a fishing vessel causing damage to the port side and bulwark.
[collision, damage to equipment]

Lessons
[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>HAZARDOUS CARGO BULLETIN, 1997, AUG. FAIR PLAY.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
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<tr>
<td>Dead</td>
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</tbody>
</table>

**Abstract**
A marine transportation incident. A tanker laden with crude oil grounded in a channel.

**Lessons**
[None Reported]
Abstract

A pipeline carrying oil from wells ruptured causing a spillage of 700 tones.

Lessons

[None Reported]
Source: HAZARDOUS CARGO BULLETIN, 1997, AUG. LLOYDS LIST.
Location: SOUTH KOREA
Injured: 0  Dead: 0

Abstract
A marine transportation incident. A container ship collided with a 2,850 gt cargo ship and then sank with 48 containers on board.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>HAZARDOUS CARGO BULLETIN, 1997, AUG. OGJ.</th>
</tr>
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<tbody>
<tr>
<td>Location</td>
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<tr>
<td>Dead</td>
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</tr>
</tbody>
</table>

**Abstract**
Approximately 715 tonnes of oil spilt over 10 acres from a ruptured pipeline, earthen trenches were built and vacuum trucks were used in the clean-up.

**Lessons**
[None Reported]
**Source:** HAZARDOUS CARGO BULLETIN, 1997, AUG.  LLOYDS LIST.

**Location:** , SOUTH CHINA SEA

<table>
<thead>
<tr>
<th>Injured</th>
<th>Dead</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

**Abstract**
A marine transportation incident. A fire occurred when a coastal tanker carrying gasoline collided with a cargo ship and sank shortly afterwards. Eight crew rescued.

**Lessons**
[None Reported]
Abstract
An air transportation incident. An explosion occurred when a plane jettisoned two laden fuel tanks over a populated area, the plane had engine trouble.

Lessons
[None Reported]
**Source:** HAZARDOUS CARGO BULLETIN, 1997, AUG. FAIR PLAY.

**Location:** , JAPAN

**Injured:** 0  **Dead:** 0

**Abstract**
A marine transportation incident. A tanker carrying 630,000 litres of gasoline collided with 1,000m3 LPG carrier, 50,000 litres of gasoline spilt.

**Lessons**
[None Reported]
Abstract
A rail transportation incident. A fuel tank of a locomotive punctured by part of a swing bridge mechanism while crossing the bridge, 12,000 l of diesel oil spilt into the river.

Lessons
[None Reported]
Abstract
A road transportation incident. A road tanker overturned after swerving to avoid a car causing 10,000 litres of heating oil to onto the road, two truckloads of sand was used to contain the oil.

Lessons
[None Reported]
A marine transportation incident. An explosion occurred on a ship at sea whilst it was transferring dirty ballast. No one was injured.

The ship was proceeding in ballast after having discharged a cargo of crude oil. Four holds contained dirty ballast, two holds clean ballast and the remaining empty holds had been cleaned. Dirty ballast was being discharged from a hold which was three-quarters full when an explosion occurred which blew the open hatch covers overboard and caused slight damage to the hatch conning. There was a force 6 wind blowing with rough seas and the ship rolling at the time of explosion (0702 hours).

No definite cause for the explosion was apparent. The possibility of a spark generated by steel to steel friction was discounted. It was concluded that a charged mist and charged water slugs may have formed which on discharge could have caused a spark.

The accepted approach regarding gas concentrations in tanks was that an overrich atmosphere was safe because it was not within the flammable range. Overrich atmospheres are, however, difficult to maintain with any reliability in tanks. Accurate gas measurements now indicate that this assumption may be erroneous and consequently the atmosphere in the tank at the time of the explosion was probably within the flammable range and therefore adequate to propagate an explosion.

Lessons

1. The operational procedures for the discharge of ballast and tank cleaning were changed following the accident. The assumption that an overrich atmosphere is safe is not now accepted and tanks are now kept gas free during operations. This is achieved by ventilating with fans throughout the discharging and cleaning operations. Measurements are taken at regular intervals to ensure that the atmosphere is below the lower explosive limit.

2. Following the accident, a recommendation was issued by the International Chamber of Shipping to the effect that OBO type ships should be operated in such a manner as to avoid slack tanks, thus obviating the possibility of ignition by compression or by static electricity.
Abstract
A marine transportation incident. One hundred and twenty tonnes of fuel oil leaked into a dock when a tanker hit the quay while trying to dock.

Lessons
[None Reported]
Abstract
A marine transportation incident. A navy ship carrying explosives blew up and sank. About a dozen people were injured in the blast on board the 450 tonne support ship which had been carrying grenades. The explosion was heard up to 19 miles away.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>HAZARDOUS CARGO BULLETIN, 1997, NOV. OGJ.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>, TAIWAN</td>
</tr>
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</tr>
<tr>
<td>Dead</td>
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</tbody>
</table>

**Abstract**

A rupture occurred in a pipeline resulting in the spillage of 500 bbl of oil. Serious pollution occurred to crop land, freshwater and fishing.

[ecological damage, transportation]

**Lessons**

[None Reported]
Abstract
A train derailed carrying highly radioactive spent nuclear fuel. Three railcars loaded each carrying one shipping cask, which contained six spent fuel elements. The accident happened while the train was changing tracks at low speed.

Lessons
[None Reported]
Source: CHEMICAL HAZARDS IN INDUSTRY, 1997, SEP.
Location:
Injured: 12  Dead: 0

Abstract
A road transportation incident. Two road transport trucks collided, spilling 200 litres of caustic soda from three drums. Twelve people were treated for burns.

Lessons
[None Reported]
A pipeline was ruptured by a mechanical digger involved in road surfacing operations. It took about 6 hours to contain the leak.

Lessons

[None Reported]
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Location</td>
<td>, CHINA</td>
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<td>0</td>
</tr>
<tr>
<td>Dead</td>
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</table>

**Abstract**
A road transportation incident. 1540 lbs of cyanide may have entered a near-by river after a truck carrying 200 drums plunged into it. Nearly 0.5 million people were warned against drinking the water.

[spill, loss of control, cyanide product]

**Lessons**
[None Reported]
A marine transportation incident. A marine barge capsized after it hit a bridge in fast moving currents. Nitrogen was pumped into the barge to lessen the risk of fire. The volatile cargo of benzene and gasoline was removed and the barge righted.

[None Reported]
A spill occurred of about 1,500 tonnes of crude oil of which 400 tonnes went into the Volga after pipeline ruptured while under repair. A 60 ft section of the pipeline was replaced.

[transportation, pollution, material of construction failure]

[Lessons]

[None Reported]
A break in a 26 inch natural gas pipeline sent a huge fire ball visible 30 miles away. There was also an apparently unrelated break in the pipe 220 miles away. The ruptures were caused by stress on the pipeline created by land movement.

Lessons
[None Reported]
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Location</td>
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</tr>
<tr>
<td>Dead</td>
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</tbody>
</table>

**Abstract**

An explosion of natural gas sent flames 30 metres into the air. The fire took 5 hours to extinguish. A similar fire occurred on the same stretch of pipeline six days earlier. Investigations suggest both incidents were caused by faulty pipeline construction.

[fire - consequence, transportation, human causes]

**Lessons**

[None Reported]
An explosion occurred in a pipeline. The pipe which was used for transporting titanium tetrachloride, was undergoing maintenance work when the accident occurred, the pipe was being pumped with water following aeration with nitrogen. Extensive damage was caused and the installation will be out of action for a considerable period.

[transportation, damage to equipment, fatality]

Lessons

[None Reported]
Abstract
A marine transportation incident. Two marine tankers in collision in fog, 32 miles from Dover. One marine tanker holed and leaked gasoline into sea. 3000 tonnes of gasoline leaked into sea.

Lessons
[None Reported]
Abstract

A rail transportation incident. A railcar carrying a nuclear fuel cask derailed during a track change in front of a nuclear power plant.

Lessons

[None Reported]
Abstract
A road transportation incident. A leak of poisonous gas occurred, the gas believed to be chlorine, leaked from drums loaded inside two containers which were being carried on a lorry that slid into a ditch. It is believed that the safety valves on the drums had not been tightened properly and loosened as the truck slid into the ditch.
The leak lasted for several hours until the area was flooded the area to dissipate the gas. 1,000 people were evacuated into nearby schools. Police in gas masks eventually removed the containers.

Lessons
[None Reported]
Location: , PAKISTAN
Injured: 200  Dead: 20

Abstract
A road transportation incident. Chlorine gas leaked from drums loaded inside two containers on a lorry which slid into a ditch. It is believed that the safety valves on the drums had not been tightened properly and loosened as the truck slid into the ditch.
[Gas / Vapour release, design or procedure error, fatality]

Lessons
[None Reported]
Abstract
A marine transportation incident. Much of the cargo of 19,000 tonnes of fuel oil leaked from marine tanker when it broke in two in stormy weather. The 10 km wide spill has affected up to 450 km of coastline. The ship is believed to have sunk after colliding with semi-submerged object.

[collision, sinking, fatality, pollution, heavy seas]

Lessons
[None Reported]
Abstract
A rupture occurred on a crude oil pipeline causing pollution. A recent evidence of further leakage results from split oil filtering down from the pipeline trench and through to the ground water. The pipeline was in a poor state of repair due to the lack of maintenance.

Lessons
[None Reported]
| Location: | West Virginia, USA |
| Injured: | 0 | Dead: | 0 |

**Abstract**

A rail transportation incident. Hundreds were evacuated when a train packed with bleach, sulphuric acid and other chemicals smashed into the back of a coal train.

**Lessons**

[None Reported]
Injured: 2  Dead: 0

Abstract
A rail transportation incident. 1,200 gallons of fuel spillage when youths operated a switching device which caused the derailment of a rail tanker. $1 million (1996) damage done.

Lessons
[None Reported]
Abstract
A road transportation incident. Correct packing procedures helped reduce the impact of the rollover of a semi-trailer. The trailer was carrying four 205 litter drums of nitric acid and four cases containing six 500ml bottles of hydrofluoric acid. The severity of the incident was minimised due to the fact that the load had been secured as required and all the dangerous goods were found to be in approved packaging.

There was some spillage of nitric acid but the cases containing hydrofluoric acid were not damaged during the incident. However, the death of the driver contributed to delays in identifying the type of products involved and the extent of the spill. In addition, a number of other factors delayed the response of emergency services.

1. The incident occurred at night in an isolated and remote location.
2. The truck was not required to display placards because of the small quantity of dangerous goods on board.
3. Shipping documents could not be recovered due to damage sustained to the driver's cab.

Lessons
[None Reported]
Abstract
A rail transportation incident. A heavy goods vehicle shuttle travelling from France to the United Kingdom stopped in the south running tunnel about 19 km from the French portal with a fire on board. Large quantities of smoke emitted from the fire rapidly engulfed the amenities coach at the front of the train. There were thirty one passengers and two crew members in the coach who all suffered from smoke inhalation which made their evacuation to the safety of the service tunnel extremely difficult.
Some of the passengers and the driver were evacuated on to a rescue train which had been stopped in the north running tunnel adjacent to the incident train. The remaining passengers and crew, after medical treatment, were evacuated via the service tunnel transport system to local hospitals in France. While passengers were receiving medical attention, fire fighting crews began a difficult fire fighting operation involving over 450 personnel from both the French and UK emergency services. The fire was eventually extinguished some seven hours later. Parts of the train and a section of the tunnel were extensively damaged and operations through the tunnel were suspended for a considerable period.

Lessons
The incident illustrated graphically a number of points, such as:
1. The effects of smoke in the confines of a tunnel can quickly induce severe anxiety and panic for anyone exposed to the incident.
2. Toxic fumes can build up rapidly and the acute effect can disable passengers and staff exposed in a very short period of time.
3. It is vital to locate the exact position of a train stopped in a tunnel to facilitate rapid rescue.
4. Early fire detection is essential in order to halt further traffic and initiate emergency plans.
5. An efficient evacuation procedure is necessary and staff should be trained in its use.
6. In the event of a fire, smoke is rapidly moved through the tunnel by the piston effect and this must be considered in the development of the emergency plan.
7. Effective communication systems are necessary to direct the rescue operations and to allay the fears of the passengers.
<table>
<thead>
<tr>
<th>Source</th>
<th>SEDGWICK LOSS CONTROL NEWSLETTER, ISSUE 1, 1996.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Yosu, SOUTH KOREA</td>
</tr>
<tr>
<td>Injured</td>
<td>0</td>
</tr>
<tr>
<td>Dead</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abstract**

A marine transportation incident. A marine crude tanker with 250,000 tonnes crude oil on board struck dolphin causing spillage of 300 tonnes from punctured side tank.

**Lessons**

[None Reported]
A marine transportation incident. An oil marine tanker containing ballast struck an unmanned gas platform 15 miles east of Port Aranas. Damage to legs of platform.

Lessons

[None Reported]
Location: UK
Injured: 1  Dead: 0

Abstract
A road transportation incident. Liquid nitrogen spillage onto M25 motorway when road tanker overturned.

Lessons
[None Reported]
**Source:** LLOYDS LIST, 1996, SEP, 4.

**Location:** Quebec, CANADA

**Injured:** 0  **Dead:** 0

### Abstract
A rail transportation incident. 36 wagons of a freight train were derailed causing hydrogen peroxide to leak and forcing the evacuation of 30 families.

### Lessons
[None Reported]
Transportation. Up to 400 tonnes of oil leaked from pipeline following rupture.

[None Reported]
Abstract
A transportation incident. An 8-inch diameter steel LPG pipeline transporting liquid butane ruptured sending a butane vapour cloud into a nearby residential area forcing an evacuation.
Two residents were killed when the entered the vapour cloud in a vehicle sparking off an explosion.
It is thought the incident occurred due to corrosion.

Lessons
[None Reported]
Abstract
A rail transportation incident. Two hundred people evacuated when a rail tanker of sulphuric acid was derailed and ruptured. Spill.

Lessons
[None Reported]
Abstract
A rail transportation incident. A train derailment caused two loaded tank cars to career onto their sides, causing a major spill of non-flammable alcohol and fatty acids. Three boxcars were also involved causing damage to the track.

Lessons
[None Reported]
### Abstract

A pipeline connecting 3rd and 4th stage suction drums on a cracked gas compressor on an ethylene plant was being modified as part of a series of wider plant modifications, using contractors. After new pipework had been prepared and positioned a welder struck an arc to complete welding, when there was a detonation. The source of the fuel for the explosion was gasoline from residual pockets of hydrocarbons which had evaporated from the cracked gas system and migrated into the line under modification. The total mass of fuel estimated to have been in the line was 48 grams. the welder was only slightly injured, and others working in the vicinity were unharmed.

Investigation showed that there had been failure to observe fully the permit to work and hot work systems in the factory; and that there had also been a failure to ensure that the part of the plant on which welding was to take place had been effectively isolated and purged.

### Lessons

The following lessons were learnt:

1. This incident classically illustrates the risks associated with hot work on plant and vessels in which flammable substances might be found, and emphasises the need for rigorous observance of adequate operational precautions.
2. Although there were clear operational failures in this case, investigation of the incident led to analysis and modification of the company permit to work systems, with the objective of increasing the protection afforded by them.
Abstract
An explosion occurred at a gas pipeline formed a crater more than 2 metres deep and 8 metres across. The explosion occurred after a bulldozer hit the pipeline
[drilling/digging/ploughing vehicles, excavation, fatality]

Lessons
[None Reported]
A road transportation incident. Road tanker overturned causing a spillage of 1000 gallons of concentrated hydrochloric acid occurred.

Lessons

[None Reported]
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Location</td>
<td>South Carolina, USA</td>
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<tr>
<td>Injured</td>
<td>0</td>
</tr>
<tr>
<td>Dead</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abstract**
Transportation. Pipeline spillage of 420,000 gallons of diesel fuel, some into a river. Pipeline was operating at reduced rate after inspection by an smart pig leak detection system. Later it was estimated that at least 1 million of No. 2 diesel spilled from the pipeline. 900,000 gallons were recovered by skimmers and vacuum trucks.

**Lessons**
[None Reported]
Transportation. A leak occurred on a southern swamp pipeline causing a spillage of 600,000 to 800,000 barrels of oil.

[None Reported]
Location: , INDIA
Injured: 0  Dead: 0

Abstract
A river transportation incident. Spillage of several tonnes of petroleum products into water at jetty when oil barge overflowed her pipeline during loading operations. 358,000 litres of diesel spilt.

Lessons
[None Reported]
Abstract
A rail transportation incident. An explosion caused two wagons carrying vinyl chloride to catch fire leaving a toxic cloud over the area.

Lessons
None Reported
Location: Kola Peninsula, RUSSIA

Injured: 0   Dead: 0

Abstract
Transportation. A spillage from a leak from a pipeline covered 30,000 sq. m. of lake and swamp with 400 tonnes of kerosene.

Lessons
[None Reported]
Abstract
A rail transportation incident. Derailment and explosion of four of 18 rail tankers, each carrying 50 tonnes of vinyl chloride which were consumed in the fire. Schools nearby were closed for a week. Pollution of ground water over 46,000 km² area with dioxins and other contaminants was reported.

Lessons
[None Reported]
Transportation. 310,000 gallons of gasoline were lost in marshland following the rupture in a pipeline from the refinery. The rupture occurred under a small tributary of a nearby river and led to the isolation of sections of local highway to avert the potential for ignition.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>LLOYDS LIST, 1996, JUN, 22.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Shenzen, CHINA</td>
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<tr>
<td>Injured</td>
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</tr>
<tr>
<td>Dead</td>
<td>1</td>
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</tbody>
</table>

**Abstract**

A gas pipeline explosion shook 20 floor building. Fatality.

**Lessons**

[None Reported]
Abstract
A rail transportation incident. A fire started around midnight in a rail tanker car containing sodium hydrosulphite.

Lessons
[None Reported]
Transportation. Up to 400 bbl of heavy fuel oil leaked into the bay from a pipeline leading from a refinery to a Power Plant. Preventative measures included closing the Arizona Memorial, stopping vessel traffic and using three local response vessels and seven US Navy skimmers in the spill area.

Lessons
[None Reported]
Abstract
A rail transportation incident. A train crash caused spillage of phenol. Many injured in clean up operations.

Lessons
[None Reported]
Source: LLOYDS LIST, 1996, MAY, 23.
Location: Hawaii, USA

Injured: 0  Dead: 0

Abstract
Transportation. A pipeline spillage of 8,400 gallons of heavy fuel oil near power plant leaked into the harbour.

Lessons
[None Reported]
Source : LOSS CONTROL NEWSLETTER, ISSUE 2, 1996.
Location : Permovayskoye, RUSSIA
Injured : 0  Dead : 0

Abstract
Transportation. The explosion destroyed a 450 metre section of the pipe. It is thought that it will be very difficult to repair and may take more than one month.

Lessons
[None Reported]
Abstract
Transportation. A rupture in a 34 inch pipeline sent a fireball over 100 ft high. The cause has been attributed to faulty welding on the pipe.
[weld failure, fire - consequence]

Lessons
[None Reported]
Abstract
Transportation. A 30 inch, 550 million scfm natural gas pipeline and compression station were shutdown due to an explosion. Operation is expected to resume at 80% rate in the short term until compression can be restored.

Lessons
[None Reported]
Transportation. Approximately 500 tonne of crude oil leaked from the 700 mm pipeline into the nearby river.

Lessons

[None Reported]
Transportation. The fire followed a natural gas leak when the 1,200 mm pipeline ruptured. Several dozen metres of pipeline had to be replaced.

Lessons

[None Reported]
Source: LLOYDS LIST, 1996, MAR, 25.
Location: Bashkortostan Region, RUSSIA
Injured: 0  Dead: 0

Abstract
Transportation. About 600 tonnes of oil spillage after a pipeline leaked.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>LLOYDS LIST, 1996, MAR, 30.</th>
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</thead>
<tbody>
<tr>
<td>Location</td>
<td>North Orillia, CANADA</td>
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<tr>
<td>Injured</td>
<td>0</td>
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<tr>
<td>Dead</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abstract**

A rail transportation incident. 60 people were evacuated following a derailment of 13 rail tankers, some containing ethylene oxide.

**Lessons**

[None Reported]
Location: Orenburg region, RUSSIA
Injured: 0    Dead: 0

Abstract
Transportation. A break in a major pipeline caused spillage of 500 tonnes of oil onto the ground.

Lessons
[None Reported]
Abstract
A river transportation incident. A river barge caused an oil spillage in waters.

Lessons
[None Reported]
Transportation. An explosion and fire occurred on a petroleum pipeline for 4 hours was caused by sabotage.

Lessons
[None Reported]
Abstract
A road transportation incident. Two road tankers carrying butane burst into flames. A gas leak was spotted as 5 tankers were unloading into storage tanks. Schools and houses within 1 km radius evacuated. Fatality.

Lessons
[None Reported]
Abstract
A marine transportation incident. Spillage of crude oil occurred following a hose line burst during loading. The accident occurred while the oil marine tanker was making fast to the terminal.

Lessons
[None Reported]
Abstract
A road transportation incident. A spillage of crude oil occurred following a hose line burst while a road tanker was on its way to the terminal.

Lessons
[None Reported]
Transportation. Explosion in section of 1020 mm natural gas pipeline.

[None Reported]
Abstract
Transportation. A total of some 12,400 tonne of crude oil leaked from the ruptured pipeline. Pollution had reached areas up to 7.5 km away.

Lessons
[None Reported]
Source: SEDGWICK LOSS CONTROL NEWSLETTER, ISSUE 1, 1996.
Location: Wisconsin, USA
Injured: 0   Dead: 0

Abstract
A rail transportation incident. A train of 32 cars including 15 carrying propane derailed. Two rail tankers ruptured and caught fire causing a feed mill and other buildings to catch fire.

Lessons
[None Reported]
Abstract
A rail transportation incident. 54,000 gallon of sulphuric acid spillage from 4 rail tankers derailed. Fatality.

Lessons
[None Reported]
Transportation. 60 cum (cubic metres) of crude oil spillage due to faulty seal.

Lessons

[None Reported]
Abstract
Transportation. An explosion blew away a large piece of the 1200 mm pipeline.

Lessons
[None Reported]
Source : SEDGWICK LOSS CONTROL NEWSLETTER, ISSUE 1, 1996.
Location : Ibadan, NIGERIA
Injured : 0   Dead : 0

Abstract
Explosion on pipeline is attributed to sabotage.

Lessons
[None Reported]
Abstract
Transportation. A gasoline pipeline blew up at km 64 caused by sabotage.

Lessons
[None Reported]
Transportation. Explosion on pipeline caused by sabotage was the third on this pipeline this year. 6500 bbl of crude oil spillage.

[None Reported]
A rail transportation incident. An engineering train rammed scaffolding, injuring three workers.
The incident occurred when two tower scaffolds were erected on the railway lines to allow repairs to the station footbridge. The line was closed to passenger services during the weekend and the scaffolding should have been removed to allow engineering trains to pass through. The first engineering train passed through the station without incident. But a second train started out after a shift change and its guide was not told about the repairs. As the station was sited on a curve, the guide was unable to see the scaffolding in time despite braking, the train hit the scaffolding at 30 mph. Two workers scrambled to safety onto the footbridge, a third man fell onto the tracks and suffered a broken leg and severe lacerations to his head and had to be airlifted to hospital.

Lessons
[None Reported]
Transportation. A pipeline rupture resulted in a fire.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>SEDGWICK LOSS CONTROL NEWSLETTER, ISSUE 1, 1996.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Chechnya, Dagestan, RUSSIA</td>
</tr>
<tr>
<td>Injured</td>
<td>0</td>
</tr>
<tr>
<td>Dead</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abstract**
Transportation. A fire occurred following an explosion on part of a natural gas pipeline. There was a second on the 2nd March.

**Lessons**
[None Reported]
Abstract
An explosion and fire on a pipeline occurred after a leak of gas.
[fire - consequence]

Lessons
[None Reported]
Abstract
Clean up costs estimated at £200,000 (1996).

Lessons
Although harmful to aquatic life, nitrobenzene is biodegradable.
Abstract
A road transportation incident. Approximately 1 tonne of nitrobenzene was spilled following a road tanker crash which occurred when a tanker crossed the central reservation and collided with a tanker carrying diesel. Both tanker cabs caught fire. Some pollution of a river occurred.

Lessons
[None Reported]
An explosion tore through a section of the 150,000 barrel per day crude oil pipeline caused by sabotage.

[None Reported]
Pilot error caused the grounding of an oil tanker carrying 130,000 tonnes of light crude oil at the entrance to a harbour. Although the main engine was stopped, put astern and both anchors dropped, the vessel continued to run ahead finally coming to rest aground. The starboard cargo ballast tanks were ruptured by the first grounding resulting in heavy trim by the head and starboard list. A quantity of oil was lost from the damaged cargo tanks.

It was decided to manoeuvre the vessel into deeper water using tugs where the vessel could be anchored and lightered to be allowed to enter the harbour and discharged the remainder of the cargo. This was achieved without further loss of cargo but a forecast of gale force winds led to the decision to turn into the wind and re-anchor. While preparations for lightering were still in progress the weather worsened and control was lost and the vessel grounded again. Four days later the vessel was brought under control and taken in to the harbour where the remainder of the cargo was discharged. Although there was no loss of life or serious injury, a total of 71,800 tonnes of crude oil was lost, of which only 2,500 tonnes escaped during the initial grounding.

Lessons

[None Reported]
Abstract
A rail transportation incident. Six rail tankers carrying liquid sulphur careened into a river. Due to freezing conditions most of the sulphur solidified.

Lessons
[None Reported]
Abstract
Transportation. The explosion in the 220,000 bpd pipeline, the tenth this year, caused a 6500 bbl spillage of crude oil into the surrounding area. Sabotage is the most likely cause.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>LLOYDS LIST, 1996, FEB, 23.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
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<tr>
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</table>

**Abstract**

Rail transportation. 500 evacuated for a second time on the 13 Feb after a flash fire from a midweek chemical spill. Rail tanker split open and 8000 gallons of carbon disulphide spillage. People within 1/2 mile evacuated for two nights.

[fire - consequence, evacuation]

**Lessons**

[None Reported]
Transportation. Explosion in a section of the north gas pipeline, led to the combustion of the gas. An 8 km section of the pipeline was isolated and the 100 metres high flame engulfed several houses, destroying four and seriously damaging seven. The fire was put out within hours.

Lessons

[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>SEDGEWICK LOSS CONTROL NEWSLETTER, ISSUE 1, 1996.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Lugansk, UKRAINE</td>
</tr>
<tr>
<td>Injured</td>
<td>1</td>
</tr>
<tr>
<td>Dead</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abstract**
Transportation. Explosion in natural gas pipeline sending flames 100 metres high.

**Lessons**
[None Reported]
Abstract
A rail transportation incident. A freight train carrying hazardous chemicals derailed and caught fire. Fatality
[fire - consequence, derailment, chemicals unknown]

Lessons
[None Reported]
Transportation. Oil spillage halted in 30 inch concrete covered pipeline in harbour.

Lessons

[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>LLOYDS LIST, 1996, FEB, 3.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
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<tr>
<td>Injured</td>
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<tr>
<td>Dead</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abstract**

Rail transportation. Freight train carrying hazardous chemicals derailed and caught fire and sent up large toxic cloud causing the evacuation of 1/2 square mile area.

[derailment, gas / vapour release, fire - consequence, chemicals unknown]

**Lessons**

[None Reported]
Abstract
Explosion in 50 inch natural gas pipeline.

Lessons
[None Reported]
Location: Nikolayev Region, UKRAINE

Injured: 0  Dead: 0

Abstract
Rail transportation. Nine rail tank wagons carrying fuel oil derailed, seven overturned and leaked.

Lessons
[None Reported]
Abstract
Transportation. Fire damaged 60 metres of the 1,200 mm pipeline causing a stoppage at a gas pumping facility.
[fire - consequence, damage to equipment]

Lessons
[None Reported]
Abstract
Transportation. Safety valve broken by thieves in pipeline sending 300 tonnes of oil into frozen river.

Lessons
[None Reported]
Abstract

A marine transportation incident. A tug towing a barge suffered an engine room explosion causing the crew to abandon ship. The barge subsequently ran aground and was holed in two places causing spillage of over 700,000 gallons of heating oil (diesel). A 10 mile stretch of coastline was threatened and extensive damage occurred to wildlife.

Lessons

[None Reported]
Abstract
A marine transportation incident. A barge ran aground after the tug boat pushing it caught fire during a severe winter storm. 828,000 gallons of the barge's cargo of heating oil spilled. The spill affected the southern shore and salt water ponds and far beyond.
The main concern at this point is damage to the fragile tidal ponds and marshes which are important breeding ground for shell fish and winter flounder. They are also important habitats for endangered birds. Reports indicated that despite efforts to protect the ponds, oil seeped in and contaminated them. The successful re-floating of the barge happened a week later. The barge was then towed out to sea where divers could examine the full extent of the damage to the barge.

Lessons
[None Reported]
Transportation. Damage to the pipeline is believed to have occurred during an illegal attempt to siphon off the oil. The pipeline has now been repaired. Spillage of 350 - 400 tonnes of oil.

Lessons
[None Reported]
A marine transportation incident. An explosion occurred in a tug engine room which caused the barge under tow to be cast adrift in 15 ft waves. The barge went aground and spillage of its cargo of diesel oil occurred. About 25% of its cargo, 800,000 gallons, was lost.

Lessons
[None Reported]
Source: "LLOYDS LIST, 1996, JAN, 15.
Location: Perth, AUSTRALIA
Injured: 1  Dead: 2

Abstract
A rail transportation incident. Two freight trains in collision caused fire ball when diesel ignited. Fatality.

[fire - consequence]

Lessons
[None Reported]
Abstract
Transportation. An oil pipeline ruptured causing 650 ft by 160 ft wide spillage only 4 miles from a river. The break was caused by construction of a by-pass route onto the main pipeline.

Lessons
[None Reported]
Transportation. Rebels detonated two explosive devices on the pipeline carrying crude oil. Some 6,000 bbl of oil spillage, polluting agricultural land and some lagoons.

[explosion, pollution, sabotage]

Lessons

[None Reported]
Abstract
A workman severed a gas pipe causing the transmission pipeline to crack resulting in gas release.
[gas / vapour release, operator error]

Lessons
[None Reported]
A road transportation incident. Chemical spill on motorway.
[unknown chemicals]

Lessons
[None Reported]
Source: "LLOYDS LIST, 1996, AUG, 5."
Location: KAZAKHSTAN
Injured: 0    Dead: 2

Abstract
A gas pipeline explosion. Fatality.

Lessons
[None Reported]
A marine transportation incident. More than 70,000 metric ton of crude oil spilled in the sea and polluted 35 miles of coastline. The tanker ran aground three times in a rescue attempt.

Lessons
[None Reported]
Abstract
Transportation. Following a spillage in a pipeline, estimated to be between 468 - 2400 tonnes, oil has polluted a river. The oil was set on fire in an effort to clear up the spillage. The damaged pipeline which runs underneath the river is to be raised to the surface for inspection and repair when the precise location of the leak is found.

[pollution, fire - consequence]

Lessons
[None Reported]
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Location</td>
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</tbody>
</table>

**Abstract**

Transportation. Pipeline ruptured causing spillage of 2,800 barrels of crude oil. The rupture was attributed to corrosion. Oil polluted river.

**Lessons**

[None Reported]
Location: Mississippi River, New Orleans, USA
Injured: 0  Dead: 0

Abstract
A river transportation incident. 38,000 gallons of crude oil spillage following the collision of a single hulled tanker river barge with a steel dolphin, causing a 1.2 metre gash. River closed to traffic for 4 days.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th>Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>A marine transportation incident. Crude oil spillage occurred of 2 - 5 tonnes. Leak appeared to come from crack in port wing tank of marine oil tanker.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lessons</th>
</tr>
</thead>
<tbody>
<tr>
<td>[None Reported]</td>
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<tr>
<td>Source :</td>
</tr>
<tr>
<td>Location :</td>
</tr>
<tr>
<td>Injured :</td>
</tr>
<tr>
<td>Dead :</td>
</tr>
</tbody>
</table>

**Abstract**

Transportation. Pipeline rupture caused release of gas that caught fire and forced the evacuation of 150 persons.

**Lessons**

[None Reported]
Location: Mstislavl, BELARUS

Injured: 0  Dead: 0

Abstract
Transportation. An explosion on the section of a natural gas pipeline due to high pressure.

Lessons
[None Reported]
Transportation. An 11 km long underwater pipeline ruptured and caused a spillage of about 1 tonne of gasoline into lagoon causing moderate amount of pollution.

Lessons
[None Reported]
Source: END REPORT 263, 1996, DEC.
Location: North Yorkshire, UK
Injured: 0  Dead: 0

Abstract
A road transportation incident. A road tanker delivered 7 tonnes of 96% sulphuric acid which was unloaded into a tank of dioctyl phthalate. No violent reaction occurred but clean up operations were difficult.

Lessons
[None Reported]
Transportation. A gas explosion and subsequent fire occurred at a pipeline causing damage of Roubles 4.3 billion. Accident caused by the erosion of a 500 mm pipe. A total of 240 metres of pipeline and an engine room were wrecked.

[fire - consequence, damage to equipment]

Lessons

[None Reported]
Location: Arauca, COLOMBIA
Injured: 0  Dead: 0

Abstract
Transportation. Pumping stopped on pipeline to allow repair after sabotage attempt. Spillage 10,000 bbl of oil.

Lessons
[None Reported]
Transportation. World's longest 34 inch pipeline ruptured for the second time in five months causing the spillage of 7,500 barrels of crude oil.

Lessons
[None Reported]
Abstract
A gas fire occurred as a section of pipeline was ruptured. Fire put out in 3 hours. Accident caused by soil shifting in the area.

Lessons
[None Reported]
Transportation. An explosion damaged a gas pipeline, halting gas supplies. Supplies were rerouted. Sabotage suspected.

Lessons

[None Reported]
Transportation. An explosion occurred when gas pressure built up to 30 atmospheres when valves at the station were shut off. The cause of the explosion was originally attributed to sabotage but later suggested that it was caused by corrosion of the pipeline.

Lessons

[None Reported]
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Ventspils, LATVIA</td>
</tr>
<tr>
<td>Injured:</td>
<td>0</td>
</tr>
<tr>
<td>Dead:</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abstract**

Transportation. A spillage of more than 50 tonnes of crude oil from a pipeline when there was an illegal attempt to tap into the line.

**Lessons**

[None Reported]
Abstract
A rail transportation incident. The release of nitrogen tetroxide was caused by a ruptured rail tanker. 3000 evacuated.

Lessons
[None Reported]
Abstract
A rail transportation incident. Chlorodifluoromethane release following the derailment of a rail tanker.

Lessons
[None Reported]
Abstract
A river transportation incident. Explosion and fire occurred on inland waterways river tanker during discharge of 930 tonnes of methanol at plant. Fatality.

Lessons
[None Reported]
A marine transportation incident. Chief officer and 2 ratings were overcome by fumes and killed after entering No. 3 deep tank during deballasting on cargo ship. Fatality.

[None Reported]
Abstract
A marine transportation incident. Leaking pipe onboard 150,000 dwt marine oil tanker caused 11,000 litres of crude oil to flow to sea and harbour. Small beach pollution.

Lessons
[None Reported]
Abstract
A marine transportation incident. One of 2 strings of flexible hoses parted during loading of 350,000 dwt marine oil tanker at single buoy mooring. Spillage of 800 tonnes of oil.

Lessons
[None Reported]
A marine transportation incident. A marine gas carrier overflowed into port when shore tank was overfilled and the overflow poured over the tanker deck. Only small amounts of water sludge with oil escaped. Spill.

Lessons
[None Reported]
Source: HAZARDOUS CARGO BULLETIN, 1995, NOV.
Location: Bugrysh, Udmurtia, RUSSIA
Injured: 0   Dead: 0

Abstract
A rail transportation incident. A fire occurred after rail tanker with propane derailed and overturned. Fire over area of 1000 sq. metres.
[rail incidents, derailment, fire - consequence]

Lessons
[None Reported]
Abstract
A road transportation incident. A vehicle carrying a load of 45-gallon drums containing M.E.K. was involved in a near collision. The incident occurred when the vehicle made an emergency stop and three drums rolled forward onto the cab of the vehicle. One of the drums was punctured in falling and the subsequent spill ignited.
The cause of the ignition is not known but it is thought that ignition may have been due to the vehicle's exhaust pipe or by a spark resulting from short-circuiting of the vehicle's battery.
The tractor unit of the vehicle was completely burnt out in the fire. The driver suffered minor burns.
The remainder of the drums were not involved in the fire.

Lessons
[None Reported]
Location: Tobolsk area, RUSSIA
Injured: 0  Dead: 0

Abstract
Transportation. Crude oil pipeline closed after spillage over 600 sq. metres.

Lessons
[None Reported]
Source: HAZARDOUS CARGO BULLETIN, 1995, DEC.  
Location: Tobolsk Area, Siberia, RUSSIA  
Injured: 0  Dead: 0

<table>
<thead>
<tr>
<th>Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation. Major crude oil pipeline closed after being damaged. Crude oil spillage spread to an area of 600 sq. metres.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lessons</th>
</tr>
</thead>
<tbody>
<tr>
<td>[None Reported]</td>
</tr>
</tbody>
</table>
Abstract
A marine transportation incident. An explosion and fire occurred on board a chemical marine tanker during unloading of methanol. Fatality.

[fire - consequence]

Lessons
[None Reported]
Abstract
A marine transportation incident involving a chemical tanker. An explosion and fire occurred on board while unloading methanol cargo. Constructive total loss.

Lessons
[None Reported]
Abstract
A marine transportation incident. An explosion and fire occurred on a marine chemical tanker during unloading of methanol at a pier. Fatality.

Lessons
[None Reported]
Abstract
A marine transportation incident. Marine tanker rammed a jetty causing 20 tonne of crude oil spillage. No major pollution as leak was stopped and dispersant used.

Lessons
[None Reported]
A marine transportation incident. A 14 year old marine oil tanker carrying a full load of crude oil had been refloated after going onto rocks. The tanker was refloated but sank again while on tow causing pollution.

Lessons

[None Reported]
Abstract
A marine transportation incident. Hose coupling on marine tanker failed during discharge at wharf during unloading. Small spillage of oil due to prompt shut down of pump.

Lessons
[None Reported]
Abstract
A marine transportation incident. 25,000 litres of crude oil spillage into harbour during unloading of marine oil tanker probably due to a burst pipe.

Lessons
[None Reported]
Source: HAZARDOUS CARGO BULLETIN, 1995, OCT.
Location: Off Vostorchnyy, RUSSIA

Injured: 1  Dead: 1

Abstract
A marine transportation incident. An explosion occurred in a marine product tanker at anchor. 400 tonnes of gasoline and diesel onboard burned for 13 hours. Vessel broke in two and sank. Fatality.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>HAZARDOUS CARGO BULLETIN, 1995, OCT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Rotterdam, NETHERLANDS</td>
</tr>
<tr>
<td>Injured</td>
<td>1</td>
</tr>
<tr>
<td>Dead</td>
<td>1</td>
</tr>
</tbody>
</table>

**Abstract**

A marine transportation incident. A marine tanker barge loading at terminal was struck by ro-ro ferry and sank. 10 tonnes of naphtha spillage to canal from damaged hull. Small LPG spillage. Fatality.

**Lessons**

[None Reported]
Abstract
A road transportation incident. A road tanker carrying liquefied oxygen overturned on State Highway and started leaking. Evacuation of people within half mile carried out. Release of material left to evaporate.

Lessons
[None Reported]
A marine transportation incident. Spillage of crude oil resulting from collision of marine tanker closed port for two days.

Lessons
[None Reported]
Abstract
A marine transportation incident. A 30,000 tonne marine oil tanker carrying crude oil rammed into a dock, causing an oil spillage which subsequently caught fire. The port discharges up to 200,000 tonnes of fuel oil per month.

Lessons
[None Reported]
Abstract
Marine transportation. Lightning struck marine tanker barge loaded with 630 tonnes of toluene at refinery. The fire burnt out on No.3 tank but not on No's 1 or 3.

Lessons
(No Lessons Reported)
Abstract
A rail transportation incident. A train crashed causing spillage of 500 tonnes of crude oil. The incident started a forest fire and resulted in pollution of a river, lake and irrigation network.

Lessons
[None Reported]
Abstract
Marine transportation. Hose on marine tanker broke during unloading of oil causing spillage of 18,000 gallons to sea. 13 km of shore line affected.

Lessons
[None Reported]
Source: HAZARDOUS CARGO BULLETIN, 1995, SEP.
Location: , SOUTH KOREA
Injured: 0  Dead: 1

Abstract
Marine transportation. A marine oil tanker was driven onto rocks by Typhoon Faye, causing a spillage of several hundred tonnes of crude oil. An oil slick 20 miles long was reported. The tanker was discharging a full cargo when the typhoon warning led to the vessel leaving port. Fatality.

Lessons
[None Reported]
A rail transportation incident. Collision of two trains caused 12 wagons to be derailed. Explosion of three rail tankers loaded with butadiene occurred and set light to others. Fatality.

[fire - consequence]

Lessons

[None Reported]
A rail transportation incident. Collision between two trains caused 12 wagons to derail. Explosion of one of three rail tankers containing butadiene and ignited other rail wagons. Fatality.

Lessons

[None Reported]
<table>
<thead>
<tr>
<th>Injured</th>
<th>Dead</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

**Abstract**

Marine transportation. 2 million litres of benzene were destroyed in an explosion in engine room and fire when marine tanker was offloading at this storage facility. Fatality.

**Lessons**

[None Reported]
Abstract
A marine transportation incident. Gas carrier with 871 cum (cubic metres) of LPG sank.

Lessons
[None Reported]
Location: Volga, RUSSIA

Abstract
A rail transportation incident. Loading of 3 rail tankers with butane and propane when there was an explosion. The blaze spread to 18 other rail tankers.

Lessons
[None Reported]

Dead: 1
Source: HAZARDOUS CARGO BULLETIN, 1995, SEP.
Location: Astara, IRAN
Injured: 200  Dead: 3

Abstract

Lessons
[None Reported]
Abstract
Transportation. Rupture of 860 mm diameter Line 3 of 4 pipeline caused spillage of 2,600 tonnes of crude oil to a farm field. Flow shut off within 4 minutes.

Lessons
[None Reported]
Abstract
A rail transportation incident. A rail tanker containing liquefied propane caught fire. Explosion spread and set light to other tankers.

Lessons
[None Reported]
**Source:** HAZARDOUS CARGO BULLETIN, 1995, AUG.

**Location:** Off Mexican Pacific Coast, MEXICO

**Injured:** 0  **Dead:** 2

**Abstract**

Marine transportation. Engine room explosion and fire on loaded 30,800 dwt marine chemical tanker caused abandonment of ship. 35 crew saved, no cargo spillage. Fatality.

*fire - consequence, marine tanker*

**Lessons**

[None Reported]
Abstract
Natural gas pipeline system overpressure. A pilot diaphragm in a metering station supplying the plant with natural gas failed. Due to several other compounding issues, the pilot failure caused the stand-by let-down station to go wide open, and resulted in a serious overpressure of the plant's natural gas distribution system. The incident was caused by failure of a diaphragm on the second stage PCV pilot which sent natural gas to the pilot vent line; the pressure equalising across the diaphragm simulated a low sensing pressure and caused the second stage PCV to go wide open, creating overpressure in system. There was no regularly scheduled programme of servicing and testing on meter station valves and instrumentation. Servicing was sporadic and minimal. The pilot diaphragms were not replaced according to manufacturer's recommendations, based on minimum expected life. Near miss.

Lessons
For utility supplies entering petrochemical plants:
1. Don't assume that they are adequately protected. Analyse the risks and assess the safeguards associated with these interfaces.
2. Ensure there is ongoing maintenance of equipment and instrumentation whose reliability impacts on your plant.
Source: HAZARDOUS CARGO BULLETIN, 1995, SEP.
Location: Junction 2 of M621, near Leeds, UK
Injured: 0  Dead: 0

Abstract
A road transportation incident. A road tanker overturned causing small spillage of aniline.

Lessons
[None Reported]
Transportation. A 700 mm diameter oil pipeline ruptured and a fire occurred. The fire shutdown 2 power transmission lines.

Lessons

[None Reported]
Transportation. A gas pipeline damaged by an explosion was repaired and recommissioned within a week. Fire brought under control in 2 hours.

[fire - consequence, damage to equipment]

[None Reported]
Abstract
Major pollution occurred in this marsh area following failure of a corroded pipeline in 1994. During May 1995, clean up operations, an attempt to burn off excess oil, resulted in an uncontrolled fire, which spread over 10 hectares of the 25 hectares spillage area. Significant environmental impact is anticipated when the Spring thaw arrives.

Lessons
[None Reported]
Location: Port Harcourt, Rivers State, NIGERIA
Injured: 0  Dead: 0

Abstract
Transportation. Gas supply interrupted by explosion on pipeline which carries liquefied petroleum gas (LPG). It was reported that the fatalities were saboteurs who were killed by the unexpected force of the explosion.

[None Reported]
Abstract

Lessons
[None Reported]
A rail transportation incident. A freight train collided with mechanical road digger near a station. 10 of 35 rail tanker wagons with crude oil derailed and caught fire. Fatality.

Lessons
[None Reported]
8159  27 April 1995

Location: Ukhta, Komi, RUSSIA

Injured: 0   Dead: 0

Abstract
Transportation. Possible sabotage caused a major explosion on a 55 inch diameter pipeline and a crater 5 metres deep and 15 metres across. The associated fire resulted in flames over 100 metres high and illuminated the local town for 2 hours at night. Automatic shutdown valves were reported to have functioned correctly and isolated a 40 km section of the line.

Lessons
[None Reported]
Abstract
Transportation. A tractor ploughed into a pipeline causing its rupture and the spillage of 250 cum (cubic metres) of crude oil into the nearby river.

Lessons
[None Reported]
Injured: 0  Dead: 0

Abstract
Transportation. Rupture in a gas pipeline caused a huge fire ball. Cause attributed to the worn out state of the pipeline.

Lessons
[None Reported]
Source: HAZARDOUS CARGO BULLETIN, 1995, JUN.
Location: Corpus Christi, Texas, USA
Injured: 0    Dead: 0

Abstract
[collision, evacuation]

Lessons
[None Reported]
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Watford, Northants, UK</td>
</tr>
<tr>
<td>Injured</td>
<td>31</td>
</tr>
<tr>
<td>Dead</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abstract**

A road transportation incident. Fifteen gallons of benzyl mercaptan leaked from a road tanker carrying drums containing the chemical. Thirty one people were taken to hospital for treatment and residents living within 10 miles of the release were advised to keep indoors.

**Lessons**

[None Reported]
20 April 1995

Source: CHEMICAL HAZARDS IN INDUSTRY, 1995, JUN.
Location: Corpus Christi, Texas, USA

Injured: 20  Dead: 0

Abstract
A marine transportation incident. Two marine barge tankers were in collision when loaded with vinyl chloride and cumene. Traces of vapour release were detected four miles from the incident and 2700 people evacuated.

[collision, gas / vapour release, evacuation]

Lessons
[None Reported]
Injured : 0     Dead : 0

Abstract
A rail transportation incident. A passenger train in collision with derailed freight train with rail tankers of gasoline. Fire burnt out two carriages.

Lessons
[None Reported]
A road transportation incident. A road tanker containing 20,000 litres of LPG came off the road at a bend into the village and ended in the front garden of a house. Gas leaked from the tanker and about an hour later ignited and destroyed the house.

Lessons
[None Reported]
MTBE (methyl tert butyl ether) spill from hired barge. A marine transportation incident. A tank barge, loaded with a cargo of MTBE was being pushed on a waterway when the crew of the tugboat detected a strong smell of MTBE. A water dip on all cargo tanks led to the discovery of a hole in the barge. It was found that the barge was holed prior to loading of MTBE, at which time MTBE began being released. The cause was the lack of a thorough check of the barge prior to loading.

Lessons
There is difficulty in detecting hydrocarbon (e.g., MTBE) spills on the water for hydrocarbons that are miscible with water.
<table>
<thead>
<tr>
<th>Source</th>
<th>LLOYDS LIST, 1995, MAR, 28.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Texas, USA</td>
</tr>
<tr>
<td>Injured</td>
<td>0</td>
</tr>
<tr>
<td>Dead</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abstract**

Transportation. Pipeline ruptured causing spillage of 100 barrels of crude oil.

**Lessons**

[None Reported]
**Source**: THE GUARDIAN, 1995, MAR, 13.; HAZARDOUS CARGO BULLETIN, 1995, MAY.

**Location**: , INDIA

**Injured**: 0  **Dead**: 110

<table>
<thead>
<tr>
<th>Abstract</th>
<th>Lessons</th>
</tr>
</thead>
<tbody>
<tr>
<td>A road transportation incident. An accident occurred on a highway when fire engulfed a road tanker, bus and tractor trailer carrying wedding guests. Substance involved: benzene.</td>
<td>[None Reported]</td>
</tr>
</tbody>
</table>

[fire - consequence, fatality]
Transportation. A rupture in the main 30 inch gas pipeline caused by a tractor clearing land resulted in the evacuation of people.

[excavation damage]

Lessons

[None Reported]
Location: Chipola, Louisiana, USA

Injured: 0   Dead: 0

Abstract
Transportation. 36 inch gas pipeline ruptured. Leak caught fire and damaged a reported 300 feet section near the Mississippi border. No impact on deliveries as the gas had been re-routed to two parallel lines. Fire lasted 2.5 hours.

[fire - consequence, damage to equipment]

Lessons
[None Reported]
Abstract
Transportation. Leak from a pipeline supplying a refinery caused spillage of 1000 tonnes of crude oil over area of 19,500 sq. m. and onto a frozen river. 27 mile section shut down.

Lessons
[None Reported]
Abstract
A river transportation incident. Marine river tanker ran aground on rocks and 30 tonnes of heating oil leaked. Barriers set up to contain spillage but thin film spread for 20 km.

Lessons
[None Reported]
Source: HAZARDOUS CARGO BULLETIN, 1995, MAY.
Location: Udmurt Republic, RUSSIA

Injured: 0  Dead: 0

Abstract
Transportation. Natural gas pipeline ruptured causing massive explosion and fire. 4 sq. km. area burnt out. Soil subsidence due to melting snow suspected as cause.

Lessons
[None Reported]
Abstract
A 26 inch pipeline ruptured. The fire ball was seen 8 miles away.
[fire - consequence]

Lessons
[None Reported]
Injured: 0  Dead: 0

Abstract
A main gas supply pipeline was blown up.
[sabotage, gas / vapour release]

Lessons
[None Reported]
Transportation. Another explosion occurred on a 220,000 bbl/day crude oil pipeline at kilometre 465 section.

Lessons

[None Reported]
A marine transportation incident. A chemical marine tanker struck an underwater object. 32 tonnes of styrene monomer spilt from port tank to sea. City and port area tainted by odour.

Lessons
[None Reported]
An explosion occurred on gas pipeline 11 miles outside state capital.

Lessons

[None Reported]
Search results from IChemE's Accident Database. Information from she@icheme.org.uk

Location: Chiapas, MEXICO

Injured: 22  Dead: 1

Abstract
Transportation. Flames leapt 50 m in the air following an LPG pipeline explosion, causing knock-on damage and secondary explosions at two other pipelines. Fatality.

Lesson
[fire - consequence, damage to equipment]

[None Reported]
Abstract

Lessons
[None Reported]
A marine transportation incident. A leak from a tank container occurred aboard a container ship. The frame of a tank container buckled during a storm at sea, causing damage to the tank shell and discharge valve and the loss of some eight tonnes of product (a solution of sodium borohydride and sodium hydroxide in water) occurred. This compound, UN number 1760, is a Class 8 corrosive product and releases hydrogen when in contact with metals. When discovered the frame around the tank container was seen to be bent and the discharge valve was damaged. The crew attempted to staunch the leak but was only partially successful.

Lessons
[None Reported]
Abstract
A 30 metre section of pipeline was destroyed supplying natural gas.

Lessons
[None Reported]
Transportation. Fire broke out when a fuel oil pipeline running from a storage tank to a loading terminal sprung a leak and ignited.

Lessons
[None Reported]
A marine transportation incident. Collision between two tankers in lightering area resulting in the discharge of bunker oil. Spill.

[None Reported]

Location: Vermilion Bay, Ontario, CANADA

Injured: 0  Dead: 0

Abstract

100 metres of pipeline torn up by explosion and fire involving 45 million scfd of natural gas.

[fire - consequence]

Lessons

[None Reported]
Abstract
A marine transportation incident. 100 oil workers were evacuated from a platform as a factory vessel was drifting towards the platform in heavy seas. Oil workers allowed back when tow connected to vessel. Near miss.

[offshore, evacuation, weather effects]

Lessons
[None Reported]
Location: Vermillion Bay, CANADA
Injured: 0  Dead: 0

Abstract
Transportation. Explosion created two craters along natural gas pipeline that hurled lengths of pipe into the air.

Lessons
[None Reported]
Transportation. A massive gas pipeline blast destroyed a busy city intersection and neighbouring power transmission lines as city commuters were returning home. Extensive damage to roadside buildings. Fatality.

[None Reported]
Abstract
A marine transportation incident. A large internal tank explosion in a chemical tanker ruptured ship. The ship spent 3 days at a tank cleaning facility prior to work on the vessel in the dry docks.

Lessons
[None Reported]
Source: HAZARDOUS CARGO BULLETIN, 1995, APR.
Location: Ghent, BELGIUM
Injured: 0  Dead: 0

Abstract
A rail transportation incident. Leakage of 30-40 kg of chlorine from rail tanker on site. Road and canal traffic halted. Spill.

Lessons
[None Reported]
Abstract
A road transportation incident. 3 one tonne IBC (intermediate bulk containers) filled with polyester amide (toxic substance) broke through the side of an unaccompanied curtain sided trailer and fell onto the deck. The trailer contained 17 IBC.

[damage to equipment]

Lessons
[None Reported]
Source : "LLOYDS LIST"
Location : Usinsk, Komi Republic, RUSSIA
Injured : 0   Dead : 0

Abstract
Transportation. 300 tonnes of oil was spilt from corroded pipeline.
[corrosion, spill]

Lessons
[None Reported]
Location: Komi, RUSSIA
Injured: 0    Dead: 0

Abstract
Transportation. A 720 mm break in a pipeline resulted in a spill of about 300 tonnes of crude oil covering 1.5 hectares. Second incident this year.

Lessons
[None Reported]
Location : Lac sur Sables, Shawinigan, CANADA
Injured : 0  Dead : 0

Abstract
A rail transportation incident. 28 cars of a 44 car train were derailed causing the spillage of 50,000 gallons of sulphuric acid into the river. The pH of the river was down to 3.7 at the spill and 5.0 16 km away. Limestone was added to the river. Investigation showed that one tanker split open completely, 10 tankers tipped into the lake and, that of these, 6 leaked, while 5 other tankers lost some of their contents. 10 of the 11 cars that lost their contents had damage to the top assembly and rupture disc due to the shield being insufficient.
[damage to equipment, pollution, inadequate guarding, derailment]

Lessons
There was a lack of shielding on the tanker domes.
Abstract
A 200 metre section of the 1,000 diameter gas pipeline was blown up causing disruption of gas flow.

Lessons
[None Reported]
Abstract
A rail transportation incident. 50,000 gallons of sulphuric acid spillage into an environmentally sensitive area after 28 rail tankers came off the rail track. Extensive pollution and damage to fish spawning grounds.

Lessons
[None Reported]
Transportation. Spillage of 7,500 bbl of crude oil following the blowing up of a 220,000 barrels per day pipeline. Repairs expected to take 2 days.

[None Reported]
Abstract
A marine transportation incident. 3000 litres of benzene was spilt from chemical tanker during cargo operations.

Lessons
[None Reported]
Abstract
A marine transportation incident. Tank container with herbicide lost overboard from ro-ro ship 40 km from Dutch coast. Spill.

Lessons
[None Reported]
Location: Mississippi, USA
Injured: 0  Dead: 0

Abstract
A river transportation incident. While a barge was transferring bunker oil to a bulk carrier there was a spillage of 10 barrels.

Lessons
[None Reported]
Location : Shandong Province, CHINA
Injured : 57    Dead : 10

Abstract
Transportation. A gas blast destroyed a busy road intersection as a gas pipeline ruptured. Fatality.

[explosion]

Lessons
[None Reported]
Location: Essex, UK
Injured: 0  Dead: 0

Abstract
A marine transportation incident. Vapour emission during discharge of oil at terminal. Local complaints.

Lessons
[None Reported]
A contractor was killed when he was struck by lightning whilst working on a construction site.
The incident occurred when four construction workers were carrying out sand compacting tests at a plant construction site.
When it started to rain the contractors stopped their work and were on their way back to the office by pick-up truck. Two were sitting inside and two were on the deck of the truck, when one of the persons on the deck was suddenly struck by lightning. The other workers were not injured.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>HAZARDOUS CARGO BULLETIN, 1995, FEB.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>North Sea.</td>
</tr>
<tr>
<td>Injured</td>
<td>0</td>
</tr>
<tr>
<td>Dead</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abstract**
A marine transportation incident. Container broke apart on deck of ro-ro vessel due to poor weather conditions. 30 barrels containing sulphur oxychloride lost overboard.

[weather effects, spill]

**Lessons**
[None Reported]
Source: LLOYDS LIST, 1994, 29 DEC.
Location: Maturin; Monogas, VENEZUELA
Injured: 15  Dead: 30

Abstract
A road transportation incident. Bus collision caused it to crash into two 12 inch fuel pipelines setting off an explosion. Fatality.

Lessons
[None Reported]
Source: BBC NEWS, 1994, 24 DEC.
Location: Stockton-on-tees, UK
Injured: 0     Dead: 0

Abstract
A road transportation incident. Acid spillage from a road tanker in car park.

Lessons
[None Reported]
Abstract
Transportation. Flow of gas was interrupted following pipeline blast. Terrorism suspected.

Lessons
[None Reported]
<table>
<thead>
<tr>
<th>Source</th>
<th>HAZARDOUS CARGO BULLETIN, 1995, FEB.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Louisiana, UK</td>
</tr>
<tr>
<td>Injured</td>
<td>0</td>
</tr>
<tr>
<td>Dead</td>
<td>0</td>
</tr>
</tbody>
</table>

**Abstract**

A river transportation incident. A towed tank river barge struck steel mooring dolphin. 150,000 litres of crude oil leaked to lower part of the river from gash in single hull.

**Lessons**

(None Reported)
Abstract
A marine transportation incident. Collision between tanker and bulk container. Small fire on tanker, 8 crew missing and emergency discharge of 130,000 tonnes of crude oil. [fire - consequence, spill]

Lessons
[None Reported]