

Prevention and Preparedness in the United Kingdom

The UK has been unfortunate in experiencing three of the top twenty oil spills in the world. It is thus well rehearsed in dealing with such disasters. However, each incident brings its own particular problems. There are always lessons to be learnt.

1967 was the first time the attention of the world was turned on the UK for a major pollution incident. The Torrey Canyon ran aground between the Isles of Scilly and Land End. She was carrying 117,000 tonnes of Kuwait crude. After a failed salvage attempt she was eventually bombed to burn off the remaining 20,000 tonnes of crude oil.

The UK Parliamentary response to this incident was to enact the Prevention of Oil Pollution Act of 1971. The intervention powers. These are now enshrined in the Merchant Shipping Act 1995.

Such an event was unplanned and unparalleled. The UK had no National Contingency Plan, no national stockpiles, no emergency towing vessels. In effect no prevention, preparedness or response strategies. Pollution control was at this time still a minor concern for IMO and member countries.

Time ticked by. It was human error that caused the accident, it was considered unlikely to happen again and the incident faded in the public conscience. In the background, the world, and in particular IMO started asking questions about measures in place to prevent oil pollution from ships, along with liability issues. This incident was the catalyst for the adoption of MARPOL and a host of initiatives linked to the protection of the marine environment.

In 1978 the Amoco Cadiz grounded in Brittany, this time in French waters. The incident happened one month after the 1978 International Maritime Organisation (IMO) Conference on Tanker Safety and Pollution Prevention. 223,000 tonnes of crude oil were at risk.

The Exxon Valdez grounding during 1989 in Prince William Sound and the subsequent birth of the Oil Pollution Act 1990 (OPA90). The IMO Oil Pollution, Preparedness, Response and Co-operation Convention (OPRC) was also coming to fruition.

Time ticked by again. It was the UK's turn in 1993 when the M/V Braer went onto rocks at Garth Ness. Shetland Island. She was fully laden with 84,700 tonnes of Norwegian Gullfaks crude and some 1,600 tonnes of heavy fuel oil bunkers. The weather was atrocious, storm force winds and mountainous seas. There were all the makings of a major economic and ecological disaster for the local community. If there was a silver lining in the cloud it was the fact that Gullfaks is volatile crude which the high winds and exceptional seas were largely able to disperse. The consequences were still serious though. This was the second major spill, ranked in the top twenty of all worldwide spills, the UK had to contend with. On this occasion the UK did have a national Contingency Plan and associated resources in place.

As with all major incidents and disasters there are always lessons to be learnt. After the Braer incident Lord Donaldson of Lymington was appointed chairman of the enquiry. The subsequent report, Lord Donaldson's Inquiry into the Prevention of Pollution from Merchant Shipping, detailed no less than 103 recommendations to Government. The report is more commonly referred to as Safer Ships, Cleaner Seas. The recommendations were very wide ranging, encompassing all aspects of global

shipping. The report principally concluded that whilst much work was already being done, there was a pressing need for the United Kingdom to take new initiatives locally, regionally, nationally and internationally.

The UK response was adapted and updated in light of some of the recommendations in safer Ships and Cleaner Seas. This was in conjunction with IMO OPRC Convention requirements. The UK had yet to accede to the OPRC Convention, but had many of the requirements in place, for example a National Contingency Plan. Safer Ships Cleaner Seas led directly to the establishment of Emergency Towing Vessels in the UK.

The clock ticked by. In 1996, the Sea Empress grounded, and the subsequent salvage operation unfolded before the eyes of a startled nation. The third such incident ranked in the top twenty of all pollution incidents from shipping had occurred in UK waters.

The incident attracted enormous public interest and provided the news media with headlines for several days as efforts to salvage the tanker and prevent massive oil pollution unfolded before the cameras of the world. 130,018 tonnes of Forties light crude oil threatened to pollute UK waters. She had run aground on the final approaches to the port entrance, pilot on board. The weather was fine and clear with a west northwesterly force 4/5 wind. Both engines were put astern, both anchors were deployed, but the vessel continued ahead and ran aground 5 cables to the northeast of the original grounding position. Oil immediately starting leaking from the ship. It was a disaster, a national disaster of the worst kind when referenced to the environment.

Again there were lessons to be learnt. The Chief Inspector of Marine Accidents launched an Inspectors Enquiry (MAIB Report). What was unusual on this occasion was the fact that the enquiry extended beyond the cause of the accident. It also embraced the conduct of the consequential salvage operation. In addition to this enquiry, Lord Donaldson conducted a Review of Salvage and Intervention and Their Command and Control.

It was generally agreed there was a text book cleanup operation of the pollution both at sea and on the shoreline. Reference the command and control arrangements Lord Donaldson pointed out in his report the following:

Quote – It is not part of our remit to agree or disagree with the MAIB report. For our purposes it is sufficient that the MAIB report paints a scenario which either did happen, or could have happened and, in any event, contained elements which should, if possible, be avoided for the future – Unquote

The outcome from both the MAIB report and Lord Donaldson's Report dramatically altered the way the UK responds to maritime casualties. The evolution of such a response culminated in Lord Donaldson's report.

It was an opportune moment. The Coastguard Agency and Marine Safety Agency were being amalgamated to form the Maritime and Coastguard Agency (MCA). The future maritime response for the UK was altered accordingly to reflect some of the 26 recommendations made in Lord Donaldson's report.

Four fundamental conclusions were as follows:

1. No direct ministerial involvement - the involvement of ministers in operational decisions is not a practical option. This led to the creation of the Secretary Of States Representative, SOSREP.
2. Trigger point for intervention – in any deteriorating situation there will come a time when the Government is entitled to intervene. From this point on Government has a continuing and inescapable responsibility to monitor events closely and, if necessary, control the whole salvage operation.
3. Maritime and Coastguard Agency officers to play a larger part in the response – this means the ability to take early steps to make salvage and counter pollution assistance available.
4. Powers in respect of offshore installations – similar state powers of intervention and control should be available for incidents involving offshore installations. Recent legislation has addressed this issue. There is now one SOSREP for both maritime and offshore incidents.

The report was published in March 1999. Four days later a ship carrying an extremely hazardous cargo of explosive chemical suffered an engine room fire and was abandoned by the crew and finally the master to the perils of the Pentland Firth, North Scotland. Some of the highest tidal rates in the world are experienced here, up to 12 knots on a good spring tide. The ship had 1800 tonnes of vinyl acetate on board.

The owners appointed Salvors. The State response included mobilisation of counter pollution and salvage equipment to the scene. The Government's emergency towing vessel stood by the casualty throughout and eventually towed her to Scapa Flow where a ship to ship transfer operation took place. This was the first occasion the new arrangements kicked into place. John Astbury, Chief Coastguard, acted as the Secretary of States Representative.

This incident was the first in a chain of maritime incidents, which involved chemicals. To date OPRC involves only crude oil and refined petroleum products. The recently adopted IMO Hazardous and Noxious Substances (HNS) protocol to OPRC is the missing link. The UK is presently developing UK legislation in this area. Future contingency planning will encompass not just crude oil and refined petroleum products but all forms of marine pollution at local, regional and national levels.

The HNS-OPRC protocol must not be confused with the draft HNS Convention which is a liabilities convention, similar to the draft Bunkers Convention.

As mentioned before the UK has already experienced some potentially serious HNS incidents, including the MultiTank Ascania, Ever Decent and Ievoli Sun. This missing link needs to be resolved quickly. It was highlighted in a recent Government National Audit Office review of Marine Pollution.

On the subject of OPRC the Maritime and Coastguard Agency are the national competent authority for this Convention. OPRC in the UK is well established. The key to preparedness includes some 180 ports and harbours to have approved OPRC Oil Spill Contingency Plans. These ports are considered to be the highest risk. In addition several hundred Offshore Plans have also been approved encompassing Oil and Gas exploration, development and production.

All of these OPRC plans dovetail with the National Contingency plan for the UK. To support the OPRC concept the UK has accreditation schemes for the Responders, the Trainers, and the Port and Offshore Installation Operators. The British Oil Spill

Control Association and the Nautical Institute administer these schemes on behalf of the MCA.

A minimum training and exercise requirement is stipulated in the Contingency Planning for Marine Pollution Preparedness and Response Guidelines produced by the MCA. These guidelines provide detailed information to enable plan writers to submit comprehensive plans to the MCA for approval. In addition to the vetting process by the MCA and final approval as OPRC compliant, the plan has to have extensive consultation with statutory consultees. These include the countryside agencies, environmental regulators, local authorities and the administrations of England, Wales, Scotland and Northern Ireland.

Local and regional resources are required to be in place under OPRC legislation for the 180 ports and harbours and all offshore installations. These resources compliment the national, Government maintained stockpiles during major incidents. The resources required are in line with the internationally adopted Tier 1, Tier 2 and Tier 3 concept. The Tiered levels must be clearly stated in the Oil Spill Contingency plans linked to the risk, environmental sensitivities and topography of the port or harbour.

The port or harbour must be capable of an in-house tier 1 response. In addition a Tier 2 capability. The majority have elected to use a Tier 2 contractor. There are eight accredited response contractors in the UK.

The plan does not sit on the shelf. It is a living document tied in with a comprehensive exercise programme. OPRC compliant ports and harbours are monitored by the MCA with a targeted audit of 40 a year. The plan has to be comprehensively updated and resubmitted every 5 years to the MCA.

Similar requirements are stipulated for the Offshore Industry. The Department of Trade and Industry, Offshore Oil and Gas Division administer this. MCA assist in this process.

Moving away from the history and preparedness side of things, what happens if there is a major incident under these new arrangements? The current NCP, available on the MCA website, outlines such a response.

The UK considers four main theatres of activity:

Firstly **Search and Rescue**. This is co-ordinated by HM Coastguard at one of eighteen rescue centers in the UK. HM Coastguard is part of the MCA.

Secondly **Dealing With the Casualty**. This, in marine terms, is the salvage end of the business. At the time of a marine casualty, where appropriate, the UK government encourages a contract, usually Lloyds Open Form, between the owners and a reputable salvor. The decisive voice in this equation is the Secretary of States Representative (SOSREP), who has the ultimate control of the salvage operation, usually through the Salvage Control Unit (SCU). Note that no action, once informed via an MRCC, means tacit approval to the salvage operation.

Thirdly **At Sea Clean Up**. This is through a Marine Response Center (MRC) set up in the port area or nearest suitable MCA premises. The control of the unit is initially by the port. As the incident grows beyond a tier 2 then MCA take control as required.

Fourthly **Shoreline Clean Up** . This is through a Shoreline Response Center (SRC). MCA supports and provides advice to the Local Authorities in the establishment and running of the SRC.

One very important point to make is that dealing with the casualty and at sea clean up are dealt with separately but are temporally linked activities. This was a clear output from Lord Donaldson's report.

Environmental considerations are catered for by the establishment of an Environment Group, provided advice to the three cells, namely the SCU, MRC and SRC. Standing environment groups are established around the UK. The chair is nominated at the start of an incident. Environmental Liaison Officers sit within the SCU, MRC and SRC cells.

A similar response is in place for incidents involving the offshore industry. There is one minor difference in that the SCU is called the Operations Control Unit (OCU). Again the ultimate control of this cell is exercised by SOSREP, Department Of Trade & Industry (DTI)

So, does the system work? It has been tried and tested on real incidents and during national exercises. Feedback is good, the system is working well. The scale of the incident determines the level of response, local, regional or national. This includes any requirements for which response cells are required. On occasions some or all of the cells can be activated.

The EverDecent is one such example of UK response under the new system:

In August 1999 the Panamanian registered container vessel Ever Decent and the Bahamian registered passenger ship *Norwegian Dream* were in collision some 12 miles off Margate in the south west lane of the Dover Strait Traffic Separation Scheme. Weather conditions on scene were very good with a northeasterly wind force 2 or 3, with a slight sea and good visibility.

The collision was outside UK territorial limits but within the UK pollution zone and hence under the co-ordination of Dover Maritime Rescue Co-ordination Centre (Dover MRCC).

The *Norwegian Dream* was a cruise ship, with 2,300 passengers and crew onboard at the time. Owned by NCL Holdings of Bermuda and operated by Norwegian Cruise Lines of Miami, Florida. Built in 1992, Bureau Veritas class, 51,000 gross tonnage with a length overall of 230 meters. She was on passage from Oslo to Dover. Dover was to be the last port of call for the cruise. ETA at the pilot station was 0400 on Tuesday 24th August.

The EverDecent was a cellular container ship with 25 crew on board at the time. Owned and operated by Evergreen Marine Corporation, Taiwan. Built in 1997, American Bureau of Shipping class, 52,100 gross tonnage with a length overall of 294 meters. She was on passage to Zeebrugge, crossing the TSS at an angle of about 67 degrees to the line of the Southwest lane, the lane the Norwegian Dream was steaming down.

The following outlines the event as the major maritime incident unfolded.

Initial reports indicated the Ever Decent was severely damaged and was listing 25 degrees to port. The Norwegian Dream reported she had suffered damage to her bow and bridge wing, lost 2 lifeboats but had no ingress of water.

At 0001 the emergency response by the Coastguard swung into action. Search and Rescue resources mobilised included lifeboats from Ramsgate, Margate and Dover together with 2 rescue helicopters accompanied by a nimrod aircraft.

At 0006 Ever Decent reported her list had increased but was now holding steady. Several containers had been lost overboard and a fire had started at the collision point.

Some time later the Norwegian Dream reported all passengers and crew were accounted for. Intentions were to proceed to Dover as a place of refuge.

In spite of serious damage to the bow and bridge wing, watertight integrity was preserved. Two lifeboats were also lost in the collision and four containers tumbled onto the fo'c'SLE of the cruise liner. It could have been a very different story. Attention now turned to the container vessel.

Forty minutes into the incident an on-scene ship reported burning debris in the water and a fierce fire on at least 2 containers on the upper deck bays. Initial assessments of the cargo type suggested a wide range of IMO classes were on board.

At 0054 the Ever Decent broadcast the fire was now out of control. With the worsening situation Dover Coastguard issued a Mayday relay broadcast on behalf of the Master. Concurrently with the Search and Rescue phase the Coastguard had also alerted Headquarters, Media, Enforcement, Surveyors, Salvage and Counter pollution staff within the Maritime and Coastguard Agency.

At 0227 The Maritime and Coastguard Agency further offered its assistance to the Master of The Ever Decent and owners in Taiwan with respect to salvage operations. Masters, owners and insured interests were discussing options at this point with salvors.

At 0315 an international consortium of salvors led by Smit Tak of Holland in association with the UK based Klyne Tugs and West Coast Towage accepted a Lloyds Open Form LOF 95 contract. Seven salvage tugs were quickly en route and a Smit rapid response team was mobilized from Rotterdam.

At 0430 the Secretary of State's Representative (SOSREP) for maritime salvage and intervention formally intervened.

**INTERVENTION AFTER A MARINE ACCIDENT : GENERAL DIRECTION :
COLLISION – EVER DECENT AND NORWEGIAN DREAM**

The Secretary of State in exercise of the powers conferred on him by section 137 of the Merchant Shipping Act (as amended) hereby directs the salvors of the container ship Ever Decent, which has been in collision and which, in the opinion of the Secretary of State may cause significant pollution in the United Kingdom or UK waters. We hereby direct you to put any plans for salvage of the vessel or its cargo, or any other proposals they have to prevent or minimise pollution to the Maritime and Coastguard Agency for approval.

Failure to comply with any requirement to this direction is an offence under the above-mentioned act.

At 0445 the Norwegian Dream was in the safe haven of Dover, alongside and further accessing the damage.

The Ever Decent was one of Evergreen Lines newest 4000 TEU ships. A six metre wide hole was punched in Number 3 wing ballast tank and she reported taking on an initial list of between 25 - 40 degrees to port. She also settled 2 metres down by the head (bows). Approximately 18 containers were now on fire and several were lost overboard. The fire was spreading down the port side.

The mixed containers with significant quantities of Hazardous cargo presented immediate risks, particularly as the seat of the fire was in the vicinity of 2 containers with 32 tonnes of potassium and sodium cyanide. There was an explosive risk and noxious smoke billowed hundreds of feet into the air, but fortunately well clear of the coast. The gash in the ship's side was just 4 metres away from a tank containing 400 tonnes of Heavy Fuel Oil. Fortunately the tank was not breached. It posed a serious threat to the marine environment.

At 0538 an MCA surveillance aircraft overflew the area and reported minimal sea pollution but extensive toxic smoke from the burning ship. Public health experts were drafted in to advise on this pollution, working closely with scientists from the MCA.

At 0800 further intervention by SOSREP was undertaken to establish a Temporary Exclusion Zone around the casualty. This prohibited any surface vessel around the casualty, not involved in the salvage operation, to enter the area.

Media interest was now extremely high. The first pictures of the damaged cruise liner limping into Dover were being flashed around the world and leading the news programmes. Media satellite crews had descended on the Port of Dover broadcasting live. They needed feeding by the MCA before coming to their own conclusions.

Salvage mobilisation carried on through the day. Salvage teams were airlifted aboard along with initial equipment. Later that day a Maritime and Coastguard Agency Marine Casualty Officer was winched aboard along with RISK fire teams from Rotterdam

At 1503 the Salvage Control Unit was formally set up at Dover MRCC. Membership of the Salvage Control Unit was strictly controlled at all times. This composed of SOSREP, MCA Pollution and salvage officer, owners/insurers representative, Salvage Manager and Environmental Liaison Officer. There were great pressures on SOSREP to increase the membership. On occasions the MRCC building was swamped with stakeholder interests including Owners, cargo, hull and P&I interests, lawyer interests, MAIB, Flag interests and so on and so on.

The fire burned for another 6 days and was slowly brought under control. Salvors were able to call upon their experience only 2 months previously fighting a similar fire onboard the container ship *Djakarta* in the Mediterranean. Stubborn fire spots were tackled one by one and pipes were inserted into individual burning containers in order to flood them. A total of one million tonnes of seawater was used to douse the fire. This posed further questions. Was this water now contaminated? How noxious was the water now contained on the ship mixing with the various cocktails in the containers.

An Environment Group was established giving advice to the Salvage Control Unit providing the link to environmental issues. One area of work included the modelling of air plumes and worked with the health service, police and the Environment Group to safeguard public health and minimise the environmental impact.

The agreed response was to monitor and reduce the fire intensity over a period of days. The Belgian Authorities were consulted at an early stage in order to agree conditions for an escorted passage to the port of Zeebrugge through the controlled French and Belgian waters. MCA and Belgian authorities undertook a joint technical inspection of the vessel and a passage plan was finally approved.

Throughout the operation the container ship maintained a position outside UK territorial waters but still in the UK pollution zone.

Some six days after the collision the vessel arrived in Zeebrugge with the fire extinguished but with smoldering containers. The operation from Search and Rescue, dealing with the casualty and associated counter pollution activities had drawn to a successful conclusion. It had involved National and International assistance from a wide number of organisations.

The *Ever Decent / Norwegian Dream* incident was the first time that a Salvage Control Unit was tested live. Since this incident an SCU has been established in a number of incidents. Lord Donaldson's model was tested successfully and the SCU proved to be a workable focus for national, international and inter-agency co-operation. Leading salvors gained first hand experience of the new MCA approach to salvage. The then President of the International Salvage Union, Hans Wallencamp, recommended that other countries adopt the UK model.

Notably this incident occurred just three weeks before the UK Emergency Towing Vessel (ETV) *Far Turbot* was brought on station for the winter months. In light of the *Ever Decent* and the *Erika* incidents UK and France now enjoy a year round ETV partnership arrangement. The UK Emergency Towing Review recommended year round cover at 4 locations in the United Kingdom. This has now been established in the UK with ETV's stationed at Stornoway, Fair Isle, Dover Straite and Southwest Approaches.

Another HNS incident a year later was to test the UK response. The *levoli Sun*, on route from Southampton to Genoa began to take in water during force 8 gales on the morning of October 30th 2000. She was eventually abandoned about 50 miles west of Guernsey.

The vessel was carrying a mixed cargo of chemicals comprising 4000 tonnes of styrene, 1000 tonnes each of methyl-ethyl-ketone and iso-propyl alcohol, plus 180 tonnes of IFO. By the evening she was undertow by a French tug. Intentions were to take her to a sheltered location off Cherbourg. She eventually foundered 11 miles to the Northwest of Alderney in 70m of water. This was outside the territorial limits of Alderney, but within the Channel Island 12 mile fishing limit. Both the UK and French Authorities were thus involved in the response.

This was a major incident, the first time in UK waters a chemical tanker, laden, had sunk. It was further complicated with the French and UK authority jurisdiction issues.

Iso-propyl and methyl ketone are both volatile solvents, fully miscible in water, and would rapidly disperse in the water column on release. Styrene is a synthetic

chemical used in the plastics industry. In its pure state styrene would spontaneously polymerize. To prevent this happening an inhibitor is added, 4-tert-butyl.

To make matters worse the shelf life of the inhibitor was limited. Scientific knowledge for such an occurrence was firstly difficult to obtain, and secondly much of the information contradicted previous information. What was universally accepted from most sources was that styrene was a moderate toxicity to marine life, though not persistent.

Opinions were as diverse as the styrene heating up as it polymerized, possibly exploding, to absolutely nothing. Styrene, however, can taint fish and shellfish and is classed by the Group of Experts on Scientific Aspects of Marine Pollution (GESAMP) as a possible human carcinogen.

Other particular pollution risks were the IFO bunker fuel on board. Of a persistent nature, but fortunately amenable to dispersants. A Salvage Control Unit was established in Cherbourg, with the Secretary Of States Representative (UK) and French interests. In addition a team of international scientific experts were convened. A substantial salvage operation commenced, in four phases, survey of the hull, identification of the sources of leakage, prevention of leakage and recovery of cargo.

After much effort, with national and international co-operation, the majority of pollutants were removed by a Remote Offloading System (ROLS), or vented to sea in a controlled release. This was a national incident, as defined in the National Contingency Plan.

It was an innovative operation lasting several months from the monitoring phase to the completion phase. The ROLS was adapted to cater for penetration to the inner double bottoms and cargo areas. A first for the international salvors Smit Tak.

Incidents involving very large crude ships appear to be on a downward trend. The International Tanker Owner's Pollution Federation (ITOPF) and the Advisory Committee on the Protection of the Seas (ACOPS) statistics support this trend. Bunkers are increasingly a threat though. Some of the medium sized ships can carry substantial quantities of bunkers. The Kodima is one such example. A timber carrier, she grounded in severe gales in Cornwall, SW England this year. There was pollution, principally from the timber deck cargo lost and jettisoned overboard in an attempt to stop the ship listing in the hurricane force winds. This was not a national incident but still posed a threat of significant pollution. Once again an SCU was established in the local area.

This paper has introduced you to prevention and preparedness in the UK. Some case histories of previous incidents have also been included. The UK has dealt with the full gambit of incidents ranging from fishing boats near fish farms, cargo ships with substantial quantities of bunker fuel oil, HNS incidents affecting both land and marine pollution, to very large crude carriers with hundreds of thousands of tonnes of crude oil on board.

Each one is different. The UK is well placed from a prevention and preparedness strategy for these types of incidents. It is not complacent though. The UK National Contingency Plan is a living document. There will undoubtedly be future incidents with associated outcomes, lessons learnt and recommendations. This will have to be taken on board and further enhancements and adjustments made to the National Contingency Plan.

References

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OPA(90)
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Web Sites

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