Marine Environment and Coastal Sea Pollution by oil spillage – A European Lesson

I. Abstract

Eighty percent of the earth's life lives in Ocean and ninety percent of the world shipping goes through ocean. Reading both together gives us the need and importance of having a good synergy between Ocean environment and Shipping. One of the major environmental risks posed is the oil spillage in sea. In Europe two billion tonnes of fret are loaded and unloaded every year and One billion tones of Oil pass through the EU port and EU waters. The paper scrutinise how the concept of 'Environment' is envisaged in the European Community Law. The paper also study on two of the major oil spillage accidents in Europe, which also paved way for changes in the way Marine Environment and Maritime Transport Safety is viewed by the European Union States. Along with the case study the evolution of the maritime transport safety in Europe and its effect on securing a safer coastal and maritime environment is also discussed in the paper.

II. Introduction

Europe has a long coastal line and is one of the busiest shipping routes in the world. The coastal ocean is home for so many rare species and sea life. Moreover, seafood industry is the livelihood of many people. European coast is also famous for its natural beauty thereby attracting numerous tourists every year. Hence, the European States have a moral responsibility to assure a clean ocean without pollution for ecological and economic reasons.

Due to high density of shipping through the European waters, the chances of accident and thereby causing marine pollution have always posed a question for the European

States. Oil spillage is the worst of the shipping accident, as it can cause contamination in a wider area for an extended period of time. It also causes grave danger for the marine and coastal life. One of the most important effected species is the sea birds. There have been several marine oil spillage accidents around European waters and that has paved way for numerous regulations and directives from the European Union.

This paper is specifically scrutinising the legal aspect of marine environment and coastal sea pollution scenario in Europe. The first chapter of the paper starts with the evaluation of the concept of 'Environment' in the European laws and further on scrutinise specifically the marine environment in the European community laws. As maritime transport is the cause of the accidents, European Union has made several Maritime Transport regulations concerning shipping and more specifically oil tanker shipping. The paper scrutinise the basic concept and how transport regulation have started in the EU.

The second and third chapter deals with two case laws. Both of them had huge impact on the marine environment and thereby causing strong public opinion to have a tough European level regulation to minimise these types of accidents. The first case law happened in 1993 near Scotland, UK. The second case law happened in 1999 near the coast of Brittany, France. The different factors of the incident and repercussion have been explained in the paper.

It can be seen that the European community institutions have responded to each and every oil spillage accidents. The fourth chapter deals with how new regulations, rules and declaration was brought forward by European institutions in reaction to the accidents. This chapter explain briefly the strong steps taken by European community through Maritime transport regulation meant for environmental safety. Even though oil spillage accidents have instigated for most of the regulations, it is influencing and make a huge impact for a better maritime safety and thereby minimising marine environmental pollution.

Chapter - I: Caoncept of Marine Environment and Europe

1. European Union and 'Environment'

There is no mention of the word 'Environment' in the treaties of Maastricht in 1993[1], amended in 1999 by the Treaty of Amster-

dam[2] and in 2003 by the Treaty of Nice[3] which forms the foundation of European Union. As per article 2 of the EC treaty the objective of community activity is the protection of the environment. It should be noted that these objectives are specifically concluded through the wordings of Article 174 of EC. Even though, the word 'environment' is not defined anywhere in the EC Treaty, it follows from Arts 174 (1) and 175 (2) EC that the environment includes human beings, natural resources, land use, town and country planning, waste and water. These include all practical areas of the environment, natural elements, flora and fauna, and man-made environments. It may also be noted that Article 6 of EC Treaty defines that, 'Environmental protection requirements must be integrated into the definition and implementation of Community policies and activities referred to in Art.3, in particular with a view to promoting sustainable development'.

The word 'environment' was first included in EC treaty in 1987. Even before the inclusion of the word environment in the EC treaty, several extensive secondary community legislation relating to water, air, noise, chemicals, nature conservation, waste and general nature, were in force through three environmental action programmes. The head of states of the governments of the European community adopted the 'Declaration on the Environment' in 1990 whereby it stated that: "the quality of air, rivers, lakes, coastal and marine waters, the quality of food and drinking water, protection against noise, protection against contamination of soil, soil erosion and desertification, preservation of habitats, flora and fauna, landscape and other elements of the natural heritage, the amenity and quality of residential areas"[4]. Thus, the term 'environment' encompasses all aspects of ecology and it needed to be noted that the declaration have made direct and specific mention to coastal and marine waters.

As per Article 300 (7) of the EC, Community law includes the international conventions to which the community have adhered

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1) [1992] O.J. C191/1

2) [1997] O.J. C340/1

3) [2001] O.J. C80/1

4) European Council Resolution of June 15, 1990 (1990) Bulletin of the European Communities, para.1.36

to. These laws are not considered as primary law of the EC Treaty, but are considered above the secondary legislation. Hence, the community laws formed through international convention prevail over conflicting environmental directives or regulations[5]. The European Community have adhered to numerous international environmental conventions and to their attached protocols. The subject matter and regulations of these conventions and protocols have been partly handled by the Community and partly by the member states. The question of responsibilities and authority of the Community or member countries depends on convention to convention. As per Arts 211 and 300 (7), by adhering to an international convention, EC commits itself to enforce the convention regulations and requirements throughout the territory of the EC, irrespective to the fact whether the member states have committed themselves to the convention through ratification. However, it need to be noted that it is the usual practice in the EC that, in the absence of specific Community directive or regulation conveying the contents of a specific International environmental convention, there will be a lack of force among member countries. The decision to adhere to a convention and lack to transpose secondary legislation, there is specific omission on the part of commission to enforce the content of the convention on the member states and therefore the member states have the discretion to ratify the convention and apply it in their jurisdiction[6].

General rules concerning environmental policy objective is not easy to be attained at European community level. There is a huge gulf in the way each country have its own priority and level at which member states implement environment policies. Some countries like, Denmark, the Netherlands, Sweden, Austria, Germany etc are more convinced of the need of environmental protection than some other countries like, Greece, Spain, Portugal, Italy etc. Some of the countries often transpose the community measures into the national legislation. Hence, the action community level is a requisite to ensure that environmental measures are taken by all the member countries. Otherwise,

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5) See Ludwing Kramer, EC Environmental Law, (2005), Fifth Edition, Thompson Sweet & Maxwell, p.6

6) See Ibid at p.8

some countries would adopt the provisions on a specific environmental issue and others might not take any action causing an imbalance in areas of competition, trade pattern, trade barrier etc between member countries. Moreover, environmental issues relating to coastal water, air pollution, ozone layer depletion, climate issues, waste management etc cannot be tackled at national level and there is a need to have a joint effort at the community level. There are also other compelling economic reasons to have community regulations, as some countries feel that environmental regulations might cause slow down in economy development and can cause political instability. The passing-on of the above mentioned problem from the country level to community level helps to bring a standardisation and equilibrium in the European Community.

The environmental policy put forward by the Community is visualised and put into action by the Community institutions and through the member country national governments. Article 249 EC provides for the legal instruments to carry out the Community tasks in the making of European Community environmental law. From a reading of Article 249 EC and Article 211 EC, the Commission has in particular the following tasks :

- to make proposals for new environ-mental legislation;
- to ensure that the provisions of the EC Treaty and the measures taken by the institutions pursuant thereto are applied;
- to formulate opinions and recommendations; to take decisions and "participate in the shaping of measures" where the Treaty so provides.

It is to be noted that in the European Community, even though not exclusive, Directorate-General for Environment (DG ENV) is the main responsible officer for environmental matters and it consists of around 550 officials. It also needs to be noted that the annual budget allocation for environmental expenses for 2003 was around 200 million euros[7]. As per the commission estimates, in 1992, the total Community expenses for the environment is 600 million euros per year[8]

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7) European Parliament, Budget 1998 [1998] O.J. L44/1

8) See supra n.5 at p.35

2. European Marine Environmental Law

Marine environment is one sector where European Community has not developed any consistent policy or regulation. Even though there are several regulations which would be passively applicable to marine waters, there is not even a single Community environmental measure which expressly protects marine environment. Moreover, when ever they mention about coastal ocean, it has been used in a limited preview to only include sea adjacent to Community territory and includes North Sea, Baltic Sea, and Mediterranean Sea and to a limited extend Atlantic Ocean. With regard to Common Fishery Policy, which is dealt under the framework of Common Transport Policy, the community have also taken interest in West Africa, the Caribbean Sea and the Antarctic Waters through the concept of 'natural resources' [9].

It may be noted here that there is no community regulation or international provision to control the use of bunker fuel in ships. There is a high level of SO2 content in the fuel and the reduction of this could be a cost effective method[10]. The initial response from the Commission was not to take any action from EC level and instead wait for the Convention on Maritime Pollution (MARPOL) to take proactive measures in the designated areas of Baltic Sea and North Sea. Thereafter in late 2002[11], Commission made a proposal to amend Directive 1999/32[12], to extend its application to marine heavy fuel oils. The directive intended to set the sulphur content of such fuel at 1.5 per cent for fuels used by all ships in the North Sea, Baltic Sea and English Channel and also for all passenger ship that regularly use an EC port[13].

Another very important issue relating to coastal sea is the dumping of waste and discharge of offshore installations. The terminology 'dumping stems from international conventions and legally speaking there is no difference between discharges of waste from

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9) See supra n.5 at p.264
10) COM (97) 88 p.49
11) [2003] O.J. C45E/277
12) Directive 1999/32 (1999) O.J. L121/13
13) Supra n.11

any other discharge into water. As per the directive under the Community waste legislation[14], the unauthorised 'abandonment, dumping or uncontrolled disposal' of waste into the water environment is prohibited, which gives an option for member states to authorise the discharge of waste into water at their discretion. The proposal on the dumping of waster at sea was made by commission in 1976[15]. Subsequently another proposal was made in 1985[16]. These proposals were not extensively discussed in council, since the member states prefer to see these issues dealt with in the international conventions rather than bringing it to the community level. Hence, the discharge of waste to water, with special reference to ships is not regulated by the community provisions. Similar connotations may be taken for the discharge of ship itself and of offshore installations. After the full life cycle, even the ships and offshore installations can be considered as waste and the same regulations can be made application. In 1995, an oil company tried to sing an offshore rig into sea, after its life cycle, called as the Brent Spar incident. Due to huge public protests, the plan was abandoned by the company. Even though, the Commission considered the elaboration of a directive on the decommissioning of offshore installations, it had to abandon the plans because of the protest from member countries[17].

It is envisaged that the sixth environmental action programme provide for the elaboration of a thematic strategy on the protection of marine environment[18]. Commission made a communication on the marine environment and as per its plan to make the thematic strategy by describing the problems and the review the available information[19].

The European Community had joined several international conventions concerning the marine environment and also has adhered to the protocols completed entered in these conventions, which are :

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14) Directive 75/442 on waste as amended by Directive 91/156 [1991] O.J. L78/32. Art. 4(2)

15) [1976] O.J. C40/3

16) [1985] O.J. C245/23

17) Written Question E-2084/95 (Mendez de Vigo) [1996] O.J. C9/15; See also supra n.5 at p.262

18) Declaration 1600/2002 (2002) O.J. L242/1

19) Towards a strategy to protect and conserve the marine environment, COM (2002) 539 of October 2, 2002

- Paris Convention on the prevention of marine pollution from land-based sources[20];
- Barcelona Convention on the protection of the Mediterranean Sea against pollution[21];
- Bonn Agreement for co-operation in dealing with pollution of the North Sea by oil and other harmful substances[22];
- Co-operation Agreement for the protection of the coasts and waters of the north-east Atlantic against pollution[23];
- Helsinki Convention on the protection of the marine environment of the Baltic Sea area[24];
- Helsinki 1992 Convention on the protection of the marine environment of the Baltic Sea[25];
- Paris Convention for the protection of the marine environment in the north-east Atlantic (OSPAR)[26];
- Montego Bay Convention on the law of the sea[27].

As explained earlier, on adherence to these international conventions, the legal provisions envisaged in these conventions become part of the Community environmental law. Even then, it should be noted that monitoring of these conventions are not ensured by the commission and each convention have its own secretariat. Moreover, Commission never tried to implement or incorporate the conventions into the community law and thereby effective control and implementation of the conventions provisions. As explained earlier in the chapter, with the lack of any specific Community directive or regulation, it is left to the member states to decide whether any of the provisions of the convention should be transposed into the national legal order.

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20) Declaration 75/437 [1975] O.J. L194/5
21) Declaration 77/85 [1977] O.J. L240/1
22) Declaration 84/358 [1984] O.J. L188/7
23) Declaration 93/550 [1993] O.J. L267/20
24) Declaration 94/156 [1994] O.J. L73/1
25) Declaration 94/157 [1994] O.J. L73/19
26) Declaration 98/249 [1998] O.J. L104/1
27) Declaration 98/392 [1998] O.J. L179/1

There have been several accidents off the coast of Europe and these accidents have increased the legislative activities in the Community level. The case laws are explained in the later chapters. The accidents have always induced an increased activity from the EC to improve the safety of maritime transport of fuel oils and other dangerous substances. In this course Community have proposed different maritime transport safety measures and also the setting-up of European Maritime Safety Agency, which is based on Art. 80(2) EC. According to Art. 1 of European Maritime Agency, the task is to ensure "a high uniform and effective level of maritime safety and prevention of pollution from ships" [28].

3. European Maritime Transport Regulation and Environment

Maritime transport safety and maritime environment goes hand-in-hand to ensure clean coastal environment and safe and sound shipping in European Community. Shipping is strategically very important for EU economy, as two billion tonnes of fret are loaded and unloaded in European Union ports every year and every year one billion tonnes of oil are transfer through EU ports and EU waters[29]. Hence, European Community has an obligation to develop and intensify its maritime safety policy to eradicate below-standard carriers and to homogenise the application of internationally agreed rules. There is a well developed international framework rules for safety at seas and there are several international convention for the protection of marine environment laid down through International Maritime Organisation. Even with all the framework and protection policies, there is consistent violation by some operators which put the environment at risk. Therefore, there is a need of European Community level directives to protect its coastline from maritime violations.

The community level legislation maritime transportation safety standards started in the year 1978 and did slow progress towards 1992. The first maritime safety policy started in the year of 1993 with the adoption of commissions communication on maritime safety named as 'A common policy on safe

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28) Regulation 1406/2002 (2002) O.J. L208/1

29) Information from Maritime transport division of European Commission, Directorate-General of Energy and Transport

seas[30]'. There upon several regulations and directive was promulgated by the community as a reaction to several accidents at sea. The change from unanimity to qualified majority for maritime decision making on 1st of November 1993 also helped to bring in wide-ranging action on maritime safety. Each new disaster in European water paved the way to more rigorous and specific action for safer maritime transport and coastal environment. European Union also made strategic initiative in maritime safety by pushing the concept of "Quality Shipping". A charter was signed between the major players in the maritime sector and resulted in the formation of 'EQUASIS' system to promote quality.

The first European level resolution was adopted after the 'Amoco Cadiz' oil tanker tragedy in 1978 and the resolution set-up an action programme of the European Communities on the control and reduction of pollution caused by hydrocarbon discharged at sea[31]. Even though the resolution had proposed specific actions to improve maritime safety, not many concrete steps were taken in the community level. Lack of community action and there were more tragedy during this time. In December 1978, the council adopted directive regulating the compulsory pilotage of vessels by deep-sea pilots in sensitive maritime areas such as the North Sea and the English Channel[32]. Further on, in 1990 the council adopted two more resolutions, one on the prevention of accident causing marine pollution and the other on passenger ferry safety[33]. These were in line with international convention and were addressed to member states. Further on in 4th march of 1991, a Council Regulation was passed regarding the transfer of ships from one register to another within the community[34]. It emphasis the importance of mutual recognition of safety and pollution prevention certificates as laid down in IMO conventions. In 1992 the European Council also adopted a decision regarding radio naviga-

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30) COM (93) 66 final, 1993 O.J. C271/1; see also Warren, L., "The impact of E.C. environmental law on law and procae relating to marine and Coastal waters" in J.Holden (ed.), The Impact of E.C. Environmental Law in the United Kingdom, (Chichester, 1997), p.167

31) See resolution O.J. C162 of 08/07/1978

32) Directive 79/115/EEC

33) O.J. C206 of 18/08/1990

tion system for Europe and the objective was to support international action towards a complete, consistent coverage of European waters with the terrestrial Loran-C radio navigation system[35].

Subsequent European council and community regulation is explained after the case laws.

Chapter - II: Case Law - I : The Braer tanker accident in Shetland Islands, United Kingdom

1. Facts of the Incident

The Braer is a Liberian registered, U.S. owned oil tanker. It was owned by Braer Corp., in turn owned by B&H shipping, Stamford, Connecticut, USA[36]. The oil tanker was insured by Skuld Protection & Indemnity, Oslo, Norway. On the night of 4th of January 1993, while sailing in heavy storm around Shetland Islands, Scotland, on the most dangerous route from Bergen in Norway to Quebec in Canada, the ship suffered engine failure due to the entrance of sea water in her bunkers. The Shetland Islands are a group of islands located off the northern shore of Scotland, United Kingdom.

The Braer was laden with 85,000 tonnes of Norwegian Gullfaks crude oil. Even though the ship lost engine power, it advised Lerwick coastguard that it was not in any immediate danger. Her estimated position was around 19 kilometres south of Sumburgh head and was drifting in predominantly south-west winds. On 5th of January morning, the coastguards alerted rescue helicopters and rapid evacuation of the crews were initiated and also made enquiries for high sea tug in the locality. There was a lack of local high sea tug and hence the ship could not be towed. Fourteen of the thirty four crews were evacuated by the coastguard helicopters from Sumburgh.

There was fear that the ship could break down near Horse Islands and coast guard persuaded the captain of the ship to abandon the ship. There were strong northwest local current and because of that the ship moved against the strong winds and missed

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34) Council Regulation (EEC) No: 613/91 on 04/03/1991

35) Council Decision 92/143/EEC

36) "Tanker Spills Norwegian Crude Oil Off Shetlands", Oil & Gas Journal, 11 January 1993, p.26

Horse Island and drifted towards Quendale Bay. Thereafter an anchor handling vessel, Star Sirius, arrived on the scene and attempted to establish a tow, for which, some of the crew personnel were taken back on board the vessel. The attempt to establish a heaving line failed and the ship ran grounded at Garth Ness, on the southern tip of the Shetlands. Because of the moment of Impact, there was damage to the tanker which led to the release of crude oil cargo into the sea.

On 12th of January the tanker break up into three sections because of continues hitting against the rocks of the Island, and of heavy high wind (100 mph approx.) due to which none of the oil cargo was able to be recovered. The entire cargo of the ship, 85,000 tonnes (620,000 barrels) of Norwegian light crude oil, estimated to be $11million shipment, which was destined for Ultramar Canad Inc.' s 125,000 b/d refinery at St. Romuald, Que., spilled into the sea[37]. The heavy adverse weather condition rendered response operation at sea impossible and also reduced the onshore operation as well. Thereby, all the oil spilled from the vessel.

2. Oil Spillage

Initially, it was expected that the oil spill would cause extreme level of damage to flora and fauna. However, a combination of the intense storms in the Shetland region and the nature of the oil prevented the event to become one of the worst tragedies. The Gulfaks crude oil carried by the Braer was not the typical North Sea oil, as it was lighter and more easily biodegradable than other North Sea crude oils. The intense storms helped in the natural dispersing of the oil by wave action and evaporation and it prevented an oil slick form forming on the surface and it broke up the spill quickly. The British planes also dropped chemical dispersants on the spill to break the oil into globules that sinks below the surface and so help to save sea birds from the immediate danger of oiling[38].

3. Environmental Impact on marine life

Once the oil spill started, it poses a grave danger to the seabirds, salmon, sea-trout, gray seals, otters, and other species on and

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37) Ibid

38) "The Wreck of the Braer", Economist, 9 January 1993, p.50

around the islands. Immediately after the Braer grounding, several local organisations, such as, Sullom Voe Terminal (SVT), Scottish Natural Heritage (SNH), Shetland Oil Terminal Environmental Advisory Group (SOTEAG), Royal Society for the Protection of Birds (RSPB), Scottish Society for the Prevention of Cruelty to Animals (SSPCA), and the Hillswick Wildlife Sanctuary, who are involved in the wildlife aspects came forward. There were also volunteer help from the people of Shetland and from outside Shetland. The activities of these organisation was categorised into three and they were, 1. Organise teams to walk in beaches and collect oiled birds and animals, 2. Deal with live oiled birds and mammals and 3. Record and store dead birds and mammals. The responses from volunteer helpers were excellent to walk in the beach especially considering the dreadful weather conditions. They were made into teams of two to check the beaches at least twice per day and collected all the dead and live birds and animals from accessible beaches[39].

There was northward spread of the oil up the west side and hence the operation had to be extended from the south-west Mainland, from Sandwick to Maywick, to extend to cover the longer stretches of accessible coastline in the Burra, Scalloway, Whiteness, Weisdale, as well as the Culswick areas. A few days after the spill, a fine mist with particles of oil started drifting over the islands and it also left oil residue on the island' s sheep. However, it was determined that the level of air pollution after the spill was extremely low despite the oily mist[40].

As per the official calculations, the death toll, as per the corpses recovered, included 1,542 seabirds, several thousand pounds of commercially farmed salmon, 10 Gray seals and 4 otters[41]. Moreover, as per the calculation, 805 corpses (52%) were found between Sumburgh Head and Garths Ness and only 60 corpses (3.8%) were collected from beaches along the east coast. The reminder were scattered evenly along the west coast and few from further north. There was a pattern in the corpses recovered with the time

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39) See "Hundred of Dead Birds Killed by Oil Pollution", Glasgow Herald, 24 January, p.7

40) "Shetland Oil Spill did Little Harm", New Scientist, 26 June 1993, p.8

41) "A Disaster that Wasn' t", Discover, January 1994, p.69

and place. During the first week of oil spillage, very few corpses were found away from the area between Scatness and St. Ninian' s Island and the majority was collected from West Voe of Sumburgh, Scatness and Quendale. Towards the second week, not many corpses were collected close to the Braer and there was corresponding increase in the number of corpses collected from further north on the west coast. The same trend continued into the third week as well, thereafter, very few birds were found anywhere. It need to be noted that the calculation of the actual mortality during an oil spillage is very difficult is usually surveyed from the corpses found on beaches and several similar factors. In the case of the Braer, the constant storms had made it very difficult to search the beaches and shorelines. It also made it difficult to catch live birds and give the necessary aids. Because of the extreme weather, systematic searches on the island of Quendale bay and further north was not possible. There were also extraordinarily high tides and which made the beaches underwater for most of the daytime for several days. This resulted in the corpses moving around in beaches with the tide and made the whole area unapproachable for the rescue workers. It is vaguely estimated that up to 32,000 birds could have perished because of the Braer oil tanker accident.

4. Legal implication of spillage

On 8th February 1993, the wreckage was designated under section 2 of the Protection of Wrecks Act (1973), which means the designated wrecks is categorised as dangerous. That was only the second time, section 2 of the Act was used to designate a wreck site as dangerous and the description was imposed due to the presence of oil in the wreck site. Following the thinning out of oil, it was later relaxed and revoked on 7th of October 1994. A total fishing ban was imposed in a large zone around the vessel. The oil spillage also affected the salmon farms further up north and large stocks of market size fish, unsuitable for consumption, had to be destroyed. The roofs of houses around that area had to be spattered with hydrocarbon particles.

5. Economic loss and implication

Because of the Braer accident and the resultant oil spillage, there are direct and indirect losses in sectors connected to environment, fisheries, tourism, transport, aquaculture etc.

Tourism is one of the most important industries for the Shetland Islands. The worst

impact of the accident is the damage to the good name of the Shetlands as a pristine environment[42]. The huge media coverage of the Braer incident is considered as one of the main negative publicity which affected tourism for the Shetlands. It is noted that, tourism was down from the year 1993 and the oil spill is cited as the main reason behind the drop in tourism. There are not many alternative jobs options for the people of these small islands and tourism is absolutely vital to their economic well-being. It is estimated that the Shetland Islands will lose 18.2 million pounds in tourism by the year 2000[43]. The loss is mainly because of the incorrect-fear among tourists regarding the permanent damage caused to the environment of the islands due to the oil spillage. The Shetlands lost 1.3 million pounds in lost bookings in 1993 and another 1.3 million pounds if travel cost are included in the calculation[44].

Seafood industry is another sector worst effected by the Braer oil spillage. The species that were affected were salmons, sea-trout, puffins, sand-eels lugworm, shellfish, lobsters etc. A total ban was imposed on the seafood coming from the Shetland Islands after the oil spillage. The ban on the seafood was placed directly on the products for health safety reasons. Within a year from the spillage, all the official restriction imposed on seafood coming from Shetlands was removed, except for shellfish[45]. The imposed ban remained in force until spring of 1995 for some commercial species of shellfish. Out of the all seafood sector, shellfish fishery was the worst effected. Even after three years, oil was still present in the shell fish coming out the Shetland areas. In some studies it showed that oil was found in some fishing areas which was far beyond the range and must be because of spreading of oil in the Shetland' s 900 miles coastline because of tides. In some specific instances, shellfish extracts were still affected by oil even in 1996. In somewhat the same way, the heavily oil contaminated salmon farms in the area caused extensive economic losses.

There were also reports of a significant drop in the number of lobsters around the

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42) See Ritchie, W. and O' Sullivan, M. (1994) (Eds.) The Environmental Impact of the Wreck of the Braer, HMSO, Edinburgh

43) "The Tainted Isles Come Clean", Scotsman, 5 January 1994, p.8

44) Ibid.

45) "Lucky Braer Escape Leaves No Room for Complacency", Lloyds List, 4 January 1994

spill site. Research in 1996 revealed that "short term exposure to oil concentration of 4 ppm, 10 ppm and 50 ppm has an adverse effect on adult, juvenile and larval lobsters and on lobster eggs. In the days following the spill the waters around the wreck site exhibited oil concentrations as high as 50 ppm (20,000 times 'normal' levels), but by ten days after the spill this had fallen to about 4 ppm. Hence, it was concluded that the Braer spill could have had an adverse effect on the lobster stocks in the area affected by the spill. The results suggest that the impact would be most severe on the younger stages of the lobster' s life cycle"[46].

6. Legal Case and Compensation

Subsequent to the Braer accident and oil spillage, the legal case was supposed to deal with the damage done to the environment in and around the Shetland Islands and the threat it posed to the fishing and tourism industry in the islands. The case centred on the insurance of the Braer Company and compensation that should be awarded to the islanders for the loss they suffered due to the accident.

According to U.K. law, which accords with the 1969 Civil Liability Convention (CLC), the liability limit for owners of the Braer could be $8 million for pollution damage, including cleanup costs[47]. Further compensation for the spill victims could also be available from the International Oil Pollution Compensation Fund, established in 1971, so that $82 million could be available in all[48]. In view of the case, more than 2,000 victims claimed compensation from the ship owner, his protection and indemnity club and the International Oil Compensation Fund. Most of the claims were settled amicably within the three year limitation period stipulated by the fund for such settlements. The remainder claims were carry forward to legal proceeding in court, but mostly settled out of court within the next couple of years.

The fishing industry made claim for compensation for their losses. For the destruction of the 1991 and 1992 salmon stocks was respectively £7.176 and £12.118 million. Mor-

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46) Laurenson, C. and Wishart, M. (1996) Preliminary Investigations of the Effects of the Braer Oil Spill. Fisheries Development Note no.4 October 1996

47) "Barer Crude Oil Tanker Splits as Weather Hinders Containment", Oil & Gas Journal, 18 January 1993, p.27

48) Ibid.

eover, the effect of exclusion zone on the fishing fleets received compensation of £ 1.363 million for the demersal fleet and £ 4.57 million for the shellfish fleet. Further on a compensation of £3.781 million was allocated for the market losses in reduced prices for the Shetland seafood products.

Last negotiation for compensation ended in October 2001 and a total payment for the Braer oil spillage amounted to £54.4 million, out of which £52.2 million was paid by the International Oil Pollution Compensation Fund. It is to be noted that even with the compensation, economic and reputation losses will stretch for a long future.

7. Aftermath of the Braer Incident and new regulation

The safety of shipping became a big question after the Braer incident in United Kingdom. To investigate the cause and the actions that need to be taken to prevent future such incident a national inquiry was commissioned by the name of Lord Donaldson' s Inquiry. The commission was set up to recommend measures to protect the UK coastline from pollution caused by merchant shipping[49]. In 1994, the report from the inquiry led by Lord Donaldson commonly known as the Donaldson Report but correctly entitled *Safer Ships*, *Cleaner Seas*, announced a total of 103 recommendations on improving shipping safety in the UK.

The Donaldson report have scrutinised several aspects of the shipping standards and have put forward recommendations addressing on topics all across the board. 20 topic areas are covered including ship design, operational discharges, port state control and dealing with emergencies. The UK government have taken generally positive actions recommended by the Donaldson report to make the coastline safe and clear from pollutions caused by merchant shipping. By 2000, out of the 103 recommendations put forward by the report, 48 recommendations have been fully implemented, 20 have been partly implemented, 27 are in the process of implementing, 5 recommendations are still under consideration and 3 have been overtaken[50].

It is a generally accepted fact that 80 percent of the maritime incidents are caused or aggravated by human error. Hence, the report makes several recommendations relat-

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49) See Scotman (1994) "Islands Council Calls for Public Inquiry into the Braer Disaster", Scotman, 22 January 1994, p.4

ing to ship management, crew training and standards of language for communication nationally and internationally. Another important factor dealt in the report is the discharges of materials from ship into marine environment. It was calculated in 1981 that, estimated 3.2 million tons of oil reaches the sea annually of which almost 1.5 million tons was due to shipping activities and of these 1.5 million, 71.5 percent resulted from normal shipping activity[51]. Hence the inquiry report makes recommendation regarding disposal of waste oil and oily ballast water at sea and also to make reception facility capacity for receiving these waste at the ports.

There is also recommendation to develop a Seaway Code for use by mariners, which was later published as the *UK Safe Seas Guide*. The inquire report looking into the difficult of identifying ships at sea and recommended the government to work with the International Maritime Organisation (IMO) to introduce a requirement that all ships carry transponders. This recommendation was strongly supported in the EU level as well.

The inquiry report recommended that a number of Maritime Environmental High Risk Areas (MEHRAs) be identified at strategic locations around the UK coastline and the information be passed on to the ships Masters. These areas would be where the shipping traffic is concentrated near areas of high environmental value. The passing of the information of the areas would help the ship Masters to select another route to avoid the area. It was also anticipated after the report that approximately 10 percent of the UK coastline would be selected as Marine Environment High Risk Areas. Along with identification of the sites, effective measures also need to be introduced to tackle the treats from marine accidents.

Chapter - Ⅲ: Case Law Ⅱ - The Erika Oil Tanker Accident outside Brittany, France

1. Facts of the Incident

Erika was an oil tanker built in 1975 and

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50) See "Ships of shame or Vessels of Virtue?", Abriefing to highlight the Wildlife Trusts' and WWF's work in marine conservation, April 1999, p.38

51) See Ibid.

was one of the eight sister ships built in Japan. It was built with 10 percent less steel than many other tankers of its size but was very popular among shipping companies because of its relative inexpensiveness. Erika was a Maltese registered tanker and on the 10th of December 1999 the 25 year old single-hulled oil tanker departed from Dunkerque in France loaded with around 30,000 tonnes of heavy n:6 fuel oil fuel bounded for Livorno, Italy[52]. On 11th of December, the ship was passing through very rough sea condition with a westerly wind force of 8 to 9 with 6 m swell, was faced with structural problem off the Bay of Biscay. The captain of the ship sends a distress message to the coastguard and went on to transfer the cargo from one tank to another. There after informed the French authorities that the situation is under control and the message was subsequently cancelled. It was also informed that the ship is heading to the port of Donges at a reduced speed.

On the 12th morning, the weather condition was getting worse and the ship started cracking into two. French coastguard helicopters along with the Royal Navy reinforcement started the rescue operation and crew were airlifted to safety, in extreme difficult condition. The attempts to re-right the ship failed and the hull plating had begun to wash off into the sea. At around 8.15 AM, while the tugs were trying to drag the ship further away from the French coastline, the hull broke completely and ship split into two in international waters, around forty nautical miles off Pointe de Penmarc' h in Southern Brittany. During this process, Erika spilled about half of her load, about thirty million gallons or 12,000 to 15,000 tonnes, of heavy fuel oil into the seas. Further on, one part of the ship sank a small distance away from the place where the ship had broken and the other portion was towed away by the salvage tug Abeille Flandre to avoid it drifting toward the French island of Belle-Ile and it sank on the following day.

2. Oil Spillage

High wind in the range of 100 kph and 6 meter swells made to believe that the slick would break up of its own. But in contrary

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52) See Mustoe, Simon, "Erika Oil Spill", report on Organisation Cetacea (ORCA), http://www.orcaweb.org.uk/downloads/Erikaoilspill.doc

to the optimism, initial aerial survey carried out by the French customs and navy planes reported slick drifting at seas. One of the slicks was 15 km long and estimated to contain around three thousand tonnes of oil and it was showing a tendency to move eastwards at a speed of about 1.2 knots. Aerial observation was continued to keep updated about the formation and movement of the slick. It showed that a series of slicks made up of thick patches which tend to split up while continuing to drift parallel to the coast and on 16th of December, small slicks of approximately 100 meter in diameter gathered in a 25 km long and 5 km wide zone.

The first traces of oil appeared on the coast of southern Finistere on 23rd of December, 11 days after the incident. Thereafter, there was continued landing of oil traces in Ile d' Yea, an island in northern Biscay. By 25th of December, oil pollutants started hitting the islands of Groix and Belle-Ile and the Vendee region. Around 14 days after the incident, island of Groix was severely affected and the bulk of the pollution reached the north and south banks of Loire River. It continued to vendee region on the north of island of Noirmoutier by 27th December. Almost a stretch of 400-500 km of the French Biscay coasts between Finistere and Charente-Maritime was affected with the oil spillage. Because of the rough weather condition and due to the high tide conditions, the oil pollutants was thrown up very high on the foreshore reaching the top of cliffs exceeding 10 meters. It can be seen that a viscous oil layer of five to thirty centimetre thick were seen covered the whole of shoreline. It is estimated that around 10,000 tonnes of oil have washed ashore between 24th December and the end of March 2000.

3. Environmental Impact

The Erika oil spillage incident is one of the worst environmental polluting accidents in the history. The oil spillage occurred at a time when many northern seabirds were wintering off the French Biscay coasts. It is expected that the spillage might have caused the death of 120,000 - 300,000 seabirds, which is by far the worst in history[53]. By 27th of December, around 15,000 dead or oiled birds had been washed ashore in the long French

coastline. Some studies have suggested that as many as 5 percent of the breeding Northern Guillemots from west Scotland may have been perished in this incident.

The French League for the Protection of Birds, with the help of English, Belgian and Dutch organisations has recovered 63,606 oiled birds, two thirds of which were picked up dead. It is to be noted that, out of the oiled birds recovered, 80% were identified as Northern Guillemots with other auks, Gannets, Common Eiders and Common Scoters. Particularly for the Northern Guillemots from colonies in southern Ireland, south Wales and western Scotland the waters of Bay of Biscay are know to be very important[54]. There are also small breeding grounds for auks off Brittany and the Channel Islands. The juveniles tend to winter further south than adults and return to breeding colonies later than adults and hence, it is understood that juveniles would have greatly affected than the adult from the Erika mishap[55]. Not much study have been done to evaluate the impact of Erika tanker mishap on the other marine life occurring in Biscay like, whales, turtles, sharks, dolphins etc. There are huge colonies of these marine species around Brittany coastline and there can be a direct impact of ingestion of oil on Harbour Porpoises, Common Dolphins and Bottlenose Dolphins[56].

4. French Response System and Its Response to Accident

In response to the oil spillage by Erika, the French response organisation was activated through the "Polmar Plan". The Polmar Plans which means "Pollution Maritime Plan or Maritime Pollution Plan" are highly specific response plan for pollution that is implemented at the time of marine oil pollution. The plan is a specialised one through which different organisations, staffs and equipments are mobilised. The Prime Minister issues the instruction for the Plomar Plan. It states that, the relevant maritime perfect is responsible for response at sea and land. There are mar-

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53) See Internal Report, League for the Protection of Birds (LPO)

54) See "The Seabird Group Newsletter" No.84, February 2000

55) See "The Seabird Group Newsletter" No. 85, June 2000

56) Ibid

itime perfects and perfect department for the land areas. In Erika oil spillage, maritime perfect of Atlantic, which means the Navy Admiral responsible for military and civil action for the whole Atlantic seaboard, is responsible for the response[57]. The perfect departments on the land will act the same way like maritime perfects for onshore response backed with all the relevant public services.

The Polmar response task is to activate a plan in high seas and near the coastline, as well as informing the land authorities, media and general public. In a high magnitude spillage, covering extensive coastal area, response on the coastal line and all the related operations are implemented under the authority of the Perfects of the affected regions, until economic activities and the environment are fully restored. As per the Plomar plan, each perfect mobilise the Polmar stockpiles, which is managed by the specialised services of the Ministry of Equipment. Each Perfect defines the areas that need prime protection, adequate responses and issues periodical update of the Plomar Land or Maritime Response Plan. The manpower required for the department of Perfect is provided by the national staff under the ministry of Defence, the national staff under the ministry of Interior and the fire brigade. The expenses for the activities are provided from the Polmar Fund, which is a budgetary allocation under the Ministry of Environment.

In the Erika oil spillage, where the level of environmental damage was enormous, inter-ministerial level co-ordination was required at the central level and was done by the General Secretary of the Sea, which is an inter-ministerial co-ordination body under the Prime Minister. The Prime Minister gave the Minister of Equipment the particular responsibility for decision making in terms of the risks that the wreck put-forward and for arranging a fully transparent public information system. As the Spill effected several departments, co-ordination was required in national level and communication was undertaken at the civil defence zone level.

On December 12th the Polmar Sea Plan was implemented by the Atlantic maritime Perfect. In line to the plan, French Navy placed on stand-by, two deep sea support vessels equipped for pollution response. Between 22nd and 24th of December, Perfects of five

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57) See report of CEDRE, www.cedre.fr

regions were activated. The regions were Finistere and Morbihan (Brittany), Loire-Atlantique and Vendee (Pays-de-Loire) and Charente Maritime (Poitou-Charente). The pollution only hit the Vendee and Charente Maritime regions between 27th and 31st of December. In the same way, Loire Atlandtuque Plomer plan was implemented on 23rd December and the shore was hit by pollutants on 26th of December. Finistere and Morbihan Plomar plan was implemented on 23rd and 24th of December respectively[58]. The Charente martime Perfect was in charge of co-ordination during the first stage of the oil slick movement. In later December, co-ordination was transferred to the Rennes (Brittany) headquarters of the Western Civil defence zone Perfects. The main reason for the transfer was because of the movement of oil and its landing in Brittany and Pays de Loire.

In the aftermath of the Erika accident, French also opened discussion about funding from the Bonn Agreement Member States[59], which is a mutual assistance agreement between North Sea countries. Moreover, Biscay plan, which is a bi-lateral agreement signed between France and Spain for mutual assistance was also activated at 4PM on 19th of December.

5. Scrutinising the Reasons for the Accident

The obvious and immediate reason for the Erika accident is the heavy wind and rough sea conditions. But it is be noted that ships are build and are expected to go through rough sea conditions during the course of its life. As a natural consequence, investigation was started to scrutinise the reasons behind the cause of accident. The flag country of Erika, Malta and its Maltese Maritime Authority (MMA) initiated an investigation to the cause of the accident in October 2000[60]. In parallel lines, French authorities also initiated investigation to ascertain the cause of the accident and to establish the organisation or individual who might have acted negligently to cause the accident. Both the investigation is discussed briefly hereunder.

According to the Malta Maritime Authority

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58) Ibid. http://www.cedre.fr/uk/spill/erika/erika.htm

59) The Bonn Agreement http://www.bonnagreement.org/eng/html/welcome/html

60) Report by Malta Maritime Authority, http://www.mma.gov.mt/, See also EC Reference: COM (2005) 590

(MMA) investigation report of October 2000, several concurrent factors caused the Erika accident. It put forward eight causes for the accident which were, corrosion, cracking, local failure, vulnerabilities in the design, prevailing sea conditions, quality of the repairs, and failure of the managers to address areas of corrosion and to monitor the repair. The report states that:

"The loss was the result of several factors acting concurrently or occurring simultaneously…The most likely reasons for the loss were corrosion, cracking and local failure, vulnerabilities in the design of the ship, and the prevailing sea conditions…In 1998 the tanker underwent repairs at the Bijela shipyard in Montenegra…the quality of the Bijela repairs could have contributed to the initial local failure, leading to the final collapse… The ship' s managers were in attendance when these repairs were carried out, yet they failed to identify and/or address areas of significant local corrosion, nor did they monitor the repairs correctly[61]."

Hence, the MMA investigation showed that the ship' s manager is responsible for the below par repairs and thereby putting the ship at risk. Further on it was investigated the role of the Classification Company, Foundation Registro Italiano Navale ed Aeronautica (RINA) based in Genova, for issuing the seaworthiness certificates.

RINA was the Classification Company for Erika and had issued a list of safety certificates for Erika. The certificates issued were :

- International Load Line Certificate[62]
- Safety Construction Certificate[63]
- International Pollution Certificate[64]
- Safety Equipment Certificate[65]
- Radio Certificate[66]

RINA have done their own investigation and came out with a report on 31st of March 2000. As per the RINA technical investiga-

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61) Ibid. see also "The Coulombi Egg Tanker - the Erika and Baltic Carrier Accidents", http://heiwaco.tripod.com/ce_erika.htm
62) dated December 16, 1998 valid until August 31, 2003
63) dated December 16, 1998 valid until August 31, 2003
64) dated December 16, 1998 valid until August 31, 2003
65) dated December 16, 1998 valid until August 14, 2000
66) dated November 23, 1999 valid until March 31, 2000
67) Supra n.2

tion[67], the Erika was lost because of an initial crack in the low part of the hull below the water line and it was misjudged and mishandled allowing it to develop until the hull break-up. The RINA study also came to the conclusion that the ship break-up didn' t happen because of an overall hull girder collapse but because the ship suffered a progressive structural failure.

The expert group constituted by the French authorities to give assistance to the court case, found that Erika have not been popular with several oil majors. It was rejected by TPS in 1994-95, accepted by Shell and BP in 1996 and further on rejected by BP in 1997 and later rejected by TPS and Shell in 1998. It was also been detained twice for corrosion of bulkheads in 11th December 1997 and corrosion of the hull on 20th May 1998[68]. It is understood that Erika went for repair in May 1998 and certificates were issued by RINA. The expert group found blame on Total SA for having chartered a sub-standard tanker.

6. Financial Compensation and Court Judgement

Soon after the oil started hitting the coast, a Claim office was opened jointly between International Oil Pollution Compensation Fund (IOPC Fund) and the Ship Protection and Indemnity (P&I) Club in the city of Lorient. An amount of 11.4 million euros were allocated as compensation to potential victims through the ship owner' s insurance. In addition to that, a compensation of 168 million euros was made available through the IOPC funds for the oil spillage victims[69]. The total compensation available through these two funds was 179 million euros.

After the Erika oil spillage, as earlier discussed, there has been several expert investigation to find the reason for the accident. There was also legal court case to ascertain the reason for the accident and to see whether there was deliberate negligence by somebody which has caused the accident[70]. The investigation has already been explained in detail above. Decision regarding the responsibility was made by the Paris Appeal

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68) Report by MEDAD, www.mer.equipment.gov.fr

69) See report of CEDRE, http://www.cedre.fr/uk/spill/erika/erika.htm

70) See "Court Ruling due in Erika Oil Spill Trial", 15th January 2008, Times of Malta, http://www.timesofmalta.com/articles/view/20080115/local/court-ruling-due-in-erika-oil-spill-trial

Court on 21st of February 2005 and the final judgement was made on 16th of January 2008.

The Final trial started in February 2007 and was over in June 2007. The Paris Criminal Court made its final judgement on 16th January 2008 and according to the final judgement, the Ship Owner (Giuseppe Savarese), the Ship Manager (Antonio Pollara), the Charterer (Total SA) and the Classification Company (RINA) was found guilty of negligence and other misdemeanours[71]. The Charterer, Total SA was fined 375,000 euros for negligence and found them 'guilty of imprudence' because of the fact that they did not take into account 'the age of the ship' and 'the discontinuity of its technical handling and maintenance'. The Italian Classification Company was also fined the same amount for certifying the twenty five year old Erika as seaworthy. A total of 192 million was ordered to pay by the defendants jointly as damage to civil parties, French states and the regions affected by the oil spillage. According to the judgement, League for the Protection of Bird (LPO) will receive a sum of 800,000 euros and World Wildlife Fund of France and Greenpeace-France were granted a sum of 33,000 euros[72]. The Court also proclaimed that the environmental organisations can sue the defendants for further damages over the impact of the ecological damage. This judgement is the first of its kind by a French jurisprudence on ecological damage liability and could act as guiding star for future pollution cases.

Chapter - IV: European Accidents and Resultant Maritime Environment Regulations

In 1993, the European Commission analysed the maritime safety situation in Europe and came out with a communication by the name "A Common Policy on Safe Seas"[73]. An action plan was presented along with the communication highlighting the main decision that need to be taken to improve the

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71) See "French Court Levies Erika Fines Against Total, Rina, Ship's Owner", 16 January 2008, Downstreamtoday.com, http://www.downstreamtoday.com//News/Articles/200801/French_Court_Levies_Erika_Fines_Against__8121.aspx

72) See "French oil giant Total fined in Erika oil spill disaster", 16.01.2008, Trend Capital News Agency http://capital.trendaz.com/?show=news&newsid=1113242&catid=583&subcatid=540&lang=EN

73) COM (93) 66 final, 24.2.1993

maritime safety in Europe. It outlines a framework for a common maritime policy for Europe based on four pillars :

- convergent implementation of existing global international rules;
- uniform enforcement of global international rules by the port states;
- development of navigational aids and traffic surveillance infrastructures, and;
- reinforcement of the EU' s role as the driving force for global international rule making body

1. Concept of Port State Control

Around ten different proposals were put forward by commission between 1993 and 2000 on the basis of the Common policy programme and all of them were adopted by the council. The main focus of all the directives were based on the protection of European coast through safety aspect of the ships visiting the European port and to compel the EU member State ships to comply with international standards. Even though the European Union approach is to uphold the international safety standards, there have been continuing failure and ignorance from some of the flag state. The systematic non-compliance by some flag states exposed the inability of EU to ensure safer seas and thereby make the EU directive ineffective. On the basis of this limitation, European community had to taken action to move away from the traditional approach of putting flag state in charge of safety of ships to port states having the right to inspect the ships to ensure compliance with safety standards. Europe is the world leaders in promoting the approach of, Port State Control. This approach is based on the promotion of International Maritime organisation resolutions and the work by the Paris Memorandum of Understanding on Port State Control[74], which from 1982 have given the signatory country authority to inspect ships in their port. Hence, European Council adopted directive[75] to have a common criteria for control of ships calling at Member State' s ports and to harmonise the procedures on inspection and detention. Further on, in

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74) Paris MOU is signed by 20 countries: Belgium, Canada, Croatia, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Russian Federation, Slovenia, Spain, Sweden and United Kingdom, www.parismou.org

75) Directive 95/21/EC

1994, another directive[76] was introduced to mutually recognise highly reliable and professionally competent bodies, "Recognised Organisation", in the member countries to carry out the statutory surveys and certification on behalf of EU Member States.

2. Concept of 'Quality Shipping'

The concept of "Quality Shipping" was put forward by European Commission in 1997 and extensive campaign covering the entire sector was started to involve the whole marine industry in working towards increased maritime safety. On 22nd of June, several of the major players in the sector signed a "Quality Charter" in Amsterdam, where by all the players in the sector accept that safety consideration Is an integral part of their everybody activities, primarily by self-regulations. Subsequent Quality Shipping campaign resulted in the formation of EQUASIS. The maritime administration of France, United Kingdom, Spain, Singapore, Japan, the US coastguards and the European Commission signed a Memorandum of Understanding (MOU) on 28th January 2000, paving way for the creation of EQUASIS information systems[77]. EQUASIS is a unique database collecting safety-related information on the world's merchant fleet on both public and private sources and making it available on the internet.

European Union contains one of the most dense shipping traffic routes in the world and hence the high risk of operational and accidental pollution to coastal environment. In September 1993, the Hazmat directive was adopted[78], which was later repealed by the adoption of subsequent directive in 2002[79], by the council for a notification system for ships carrying dangerous or polluting good, regardless of their flag, bound for or leaving European Union ports. This directive had a wide range of duties, which include, the shipper or ship operator must provide the authorities with detailed information of the nature of the cargo. This will help the authorities to have necessary precaution and the knowledge of the hazardous good in their coastal waters, which will help to pre-

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76) Directive 94/57/EC

77) www.equasis.org

78) Directive 93/75/EC

79) Directive 2002/59/EC

vent or at least minimise accidents at sea. Further on, Council adopted regulation in 1994[80], which was later repealed by the adoption of regulation in 2002[81], in proportion to International Maritime Organisation resolution A.747 (18). It encourage the use of environment friendly tankers in EU waters and adding the strength to the promotion of tankers with segregated ballast tanks (SBT) as well as double hull oil tankers of an alternative design. By applying port and pilotage fees in EU ports, the above mentioned aim was achieved excluding the tonnage and segregated ballast tanks.

In line with the Torremolinos Convention, the council adopted directive imposing common safety requirements for new and existing fishing vessels of 24 meters of length and above, irrespective of their flag and when operating in the internal or territorial waters of Member States of landing their catch at a port in the community[82]. The council also adopted a directive incorporating in the EU legislation the 1997 International Maritime Organisation bulk loading and unloading code (BLU Code). The directive was purported to enhance the safety of bulk carriers calling at terminal in the Member States and to impose a quality system for terminals[83].

MARPOL 73/78 convention came into force to prevent operational pollution by ships and the illegal discharge of polluting substances into the sea. Unfortunately, it continued happening with the international convention. European Council in December 2000 adopted a directive for the ports to install reception facilities for ships enerated waste and cargo residues[84]. By providing adequate facility for waste reception in all the EU ports, a consistent reduction in marine pollution was acquired. It was also made mandatory in recreational ports and marinas.

Studies have proved that more than 80 percent of accidents are a direct effect of human mistake. To give strength to the 1978 convention of International Maritime Organisation on standards of training, certification and watch keeping for Seafarers (STCW), the

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80) Council Directive No: 2979/94
81) Regulation 417/2002/EC
82) Directive 97/70/EC
83) Directive 2001/96
84) Directive 2000/59/EC

council adopted a directive in 1994[85]. The directive was further revised in 1998 in line with the revision to STCW convention by IMO in 1995, whereby officers on board EU-flagged ships have to undergo specific training and hold a certificate recognised under the STCW convention[86]. The directive also provided the concept of 'Port State Control' inspection. In the same line, Council adopted directive to address the International Labour Organisation convention number 180 regarding 'seafarers hours of work'. It deals with the working time of seafarers and the lack of rest on board vessels and fatigue due to excessive working[87]. Council also brought out directive to monitor the seafarers hours of work on board ships through community ports through Port State Control method[88].

Harmonisation of safety rules internationally create a situation where by there will be a standard procedure for testing with in all the international players. With this objective Council adopted a directive to ensure uniform application of international testing standards and procedure for all type-approval of marine equipments on board of EU flagged ships[89]. The directive was first promulgated in 1996 and came into force in 1999 and its technical annexure have last been updated in 2002 through a council directive[90]. An Agreement between the European Community and the United States has been signed on 27th of February 2004 for mutual recognition of certificates of conformity for a specific number of marine equipments.

3. 'Erika' packages

'Erika' accident in December 1999 caused exceptional high damage to environment, fisheries and tourism. This resulted in the European Commission to come forward within a short span of time with several directives and regulations on maritime safety. On 21 March 2000, the first set of proposal, popularly knows as Erika - I package, was adopted which was followed by a second

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85) Council Directive 94/58/EC
86) Council Directive 2001/25/EC
87) Directive 1999/63/EC
88) Directive 1999/95/EC
89) Directive 96/98/EC
90) Directive 2002/75/EC

set, Erika - II package, in December 2000.

The Erika - I package was a fast reaction to the short coming highlighted during the Erika accident. It dealt mainly with three issues. Firstly, it strengthened the Port State Control provision which was envisaged in the commission direction of 1995[91] and adopted the 2001 directives[92]. As per the new directive, the inspection regime has been substantially reinforced in order to increase the number of ships subjected to expanded inspections and to ensure that ships which have been inspected and declared substandard on several occasions be blacklisted and refused access to EU ports. First such list was published in 25th July 2003 and a second one followed on 30th September 2004, which detailed the ships which were refused access to EU port between 1st November 2003 and 31st August 2004. The European Maritime Safety Agency publishes on internet a regularly updated list of ships which are refused access to EU ports. Second important factor which was dealt in Erika - I package is the classification societies which conduct structural safety checks on ships on behalf of flag ships. There was already a directive adopted in 1994[93] by the council, which was further strengthened by a subsequent directive in 2001. The 2001 directive raised the quality requirements for classification societies and made these conditions mandatory to operate in EU[94]. Further more, the performance of these classification societies were more closely and strictly monitored and failure to meet the standards would result in temporary or permanent withdrawal of their authorisation.

The third important issue that was dealt through Erika - I package was to set a timetable to phase out single hull oil tankers worldwide. The community adopted a directive in this regard in 2002[95]. The International Maritime Organisation had decided that all oil tankers built after 1996 should be a double hull. Through Erika - I package, European Union tried to secure international acceptance to phase out the single hull

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91) Directive 95/21/EC
92) Directive 2001/106/EC
93) Directive 94/57/EC
94) Directive 2001/105/EC
95) Regulation (EC) No: 417/2002

tankers. The Double hull tankers are better protected for the environment in the event of an accident and by the year 2006, there has been a gradual replacement from single hull tankers to double hull tankers.

The Erika - II package complemented the first package with additional three measures. It aims was to drastically improve the maritime safety in European waters. In August 2002, through a council regulation, European Maritime Safety Agency (EMSA) was established to improve enforcement of the EU rules on maritime safety[96]. Secondly through another directive, which came into force on 5th February 2005, a surveillance and information system to improve vessel monitoring in European waters was established[97]. As per the directive, ships sailing in EU waters have to be fitted with the identification systems which automatically communicate with the coastal authorities, as well as voyage data recorders (black boxes), which help accident investigation. This directive help in the exchange of data regarding cargo and authorities will be able to instruct the vessel regarding bad weather. It was also proposed through the Erika - II package to increase the compensation limit and to start a mechanism to compensate the victims of oil spill (COPE Fund). It proposed to raise the upper limit on the compensation amount for oil spills from 236 million euro to one billion euro. Even thought the raising of upper limit is not been decided by the Council of Ministers, through a protocol, the Europe's COPE fund was adopted in may 2003 to create a supplementary fund. The protocol came into force in 2005. Thereby, the available compensation for victims in the states covered by this fund is 872 million euro for each accident occurring after the protocol entered into force.

4. European Maritime Safety Agency (EMSA)

On 27th June 2002 the European Parliament and the Council adopted a directive, whereby the European Maritime Safety Agency (EMSA) was established. From 2006 onwards, EMSA is based in Lisbon. The EMSA provide technical and scientific assistance to the Commission in the fields of maritime safety, maritime security, prevention of pol-

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96) Regulation (EC) No: 1406/2002

97) Directive 2002/59/EC

lution and response to pollution caused by ships. It helps in the updating and developing new legislation, monitoring the effectiveness of the measures and the implementation processes. The EMSA assist Member countries for the implementation of community legislation, organising training activities and favouring a dissemination of the best practice in community[98]. The specialised staffs of the Agency carry out check-up visits to member countries as well as third countries. ESMA is already very active in the monitoring of classification societies, port state control and the development of ships reporting systems in member states. A pan-European electronic information system, SafeSeaNet, dealing with ship movement and cargoes is operated by ESMA.

Through a directive in 2004, EMSA have been given addition job to assist, upon request, with antipollution means (specialised ships and equipments), member states affected by pollution caused by ships. EMSA adopted a pollution response plan in October 2004 to initiate action in line with its new task. A financial package of 154 million euro in a period of seven years (2007-2013), was granted by the European Commission to finance this special task on a multi-annual basis to combat pollution caused by ships[99]. The grant is to acquire specialised anti-pollution vessels, which will be available to member states, to recover pollutants and to develop satellite technology to combat pollution caused by accidents.

5. 'Prestige' accident and Regulatory Changes

On the aftermath of "Prestige" accident, there was rapid action from European Commission. It came out with a communication on 3rd December 2002. As per the commission regulation, the timetable for EMSA was made earlier by six months and the agency was given three new tasks connected with combating pollution, placing additional resources, clean-up equipment and vessels and at the additional disposal of the Member States[100]. The commission submitted a proposal to the European parliament and council in 2002 to ban and speed up the phasing

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98) Regulation 724/2004

99) Regulation 2038/2006

100) Regulation (EC) No: 1644/2003

out of single-hull oil tankers. There-upon, on 21st of October 2003 as per the council regulation, single-hull tankers carrying heavy oil are no longer allowed to enter or leave ports in the Member States[101].

The commission made a proposal in 2003, which the European Parliament and Council adopted in 12th July 2005, regarding on ship-source pollution and on the introduction of sanctions, including criminal sanctions for pollution offences[102]. A framework was adopted to strengthen the enforcement of the law against ship-source pollution. It establishes that marine pollution by ships is an infringement of the community law and sanctions can be brought against any party who contribute to illegal pollution intentionally or by gross negligence, including the master, the owner, operator and the charterer of the ship or the classification society.

III. Conclusion

The paper have explained how the concept of Marine Environment originated in the European Union and how it got transformed and evolved to respond to the menace of Oil spillage accidents. Marine ecology is very important for any coastal states as it greatly influence the life of the people of the state. It has both ecological and economic reason. The paper has explained the impact of Oil spillage accidents and its economic consequence. Oil spillage is the worst of the shipping accident, as it can cause contamination in a wider area for an extended period of time.

Marine Environmental protection had a slow evolution and several accidents have accelerated the pace at which it developed. The European coastal waters are one of the busiest shipping routes in the world coming from all corners of the world. This forced the European Union to formulate new concepts such as 'Port State Control', 'Quality Shipping' etc. These concepts have received world wide recognition and are helping to make the Maritime Environment and shipping safer.

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(프랑스 주재 외국법제 조사위원)

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101) Regulation (EC) No: 1726/2003

102) Directive 2005/35/EC