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ENVIRONMENT AND TOWN PLANNING COMMITTEE

SUB-COMMITTEE ON POLLUTION

REPORT ON MARITIME POLLUTION CAUSED BY SHIPPING AND LAND-BASED POLLUTION

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RECOMMENDATIONS

This document drawn up by the Rapporteur is to be submitted for discussion to the Sub-committee on Pollution at its meeting on 3 December 1981 in Vienna

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C O N T E N T S

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RECOMMENDATIONS

1. Enforcement of Existing Legislative Measures.

As stated before in the report*, there is definitely no lack of legislation as far as pollution of the sea by oil is concerned. There is enough and one expects that the Law of the Sea which is in its final stages, once agreed upon, will be the final legislative exercise concerning such matters.

Bilateral, multilateral and international agreements willcontinue to be negotiated but this will be done on the basis of existing legislation.

As far as national legislations are concerned, the situation is also good. All countries in Europe have basic anti-pollution legislation in keeping with international conventions and agreements. On the basis of such legislation are formulated "action plans" or "contingency plans" aimed at combating oil pollution from various aspects - pre-accident, during the accident, and post-accident.

Whereas regional and local authorities may be fully geared to deal with oil pollution, their labours will be futile, until and unless the problem is dealt with effectively at international level. Shipping as such is essentially international in nature, and only the enforcement of international laws and legislations will have any measure of effective control over pollution as occurs from shipping.

The suggestions of setting up unwieldy and cumbersome agencies such as a European Maritime Agency (1) or a European Data Bank (2) are in my opinion well intentioned but not practical. These projects involve repetition of what already exists in part, and as such ignore the work of long established and very active international organisations which have, over the years, shown their genuine concern, and efficiency in dealing with the problem of oil pollution.

The problem of coordination of available anti-pollution expertise and resources is to be dealt with primarily on a regional basis as will be hinted at later in these recommendations.

The role of the Council of Europe, as far as existing legislation is concerned should be aimed at:

(a) Doing all in its power to exhort its member countries primarily, and secondly, other countries (possibly through the help of international organisations accredited to the Council of Europe) to sign, and ratify existing conventions and agreements which are relevant and of interest to each particular country according

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to its geographical location, and regional interests; and further to see that such conventions and agreements are put into practice through relevant and updated national and local legislation.

(b) to extend all possible co-operation and help, both moral and physical, to all international organisations already active in the field of oil pollution, and exhort its member states, and associated organisations of local and regional authorities, to do the same on a subnational basis.

Particular mention to be made of the United Nations Environment Programme and the Intergovernmental Maritime Consultative Organisation.

2. Setting-up of Regional Oil Combating Centres

As has been made amply clear in the answers to the questionnaire, coastal regions have probems which are common to all regions bordering a sea, or ocean, as well as other problems of a particular nature, which prove to be specific to the region itself, and to all other neighbouring regions in the same geographical region.

The countries bordering the North Sea have many problems in common with these of states surrounding the Mediterranean but each region, because of its geographical location, state of development, and other socio-economic considerations, presents a set of other problems, specific to the Region. For example, whereas the Mediterranean Sea is a relatively closed sea with very heavy traffic of oil tankers, the North Sea is an open sea with oil drilling and oil extraction activities dominating the picture.

Because of these considerations, countries faced with the same problems, got together and formulated Regional policies and plans to deal with their specific problems (e.g Bonn Convention, Barcelona Convention, Anglo-French Manche Plan, etc...).

It follows that Regionalisation in anti-pollution planning is a logistic necessity.

This policy has proved effective and efforts should be aimed at developing further such organisation on a regional basis. Experience has shown that in spite of the best state of preparedness and the best legal and technological preventive measures, national contingency plans, while possibly adequate to deal with small scale spills, would not be enough in dealing with major accidents. Supplementation by bilateral or multilateral plans, agreed upon by neighbouring regions, will have to be resorted to.

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Both administratively and economically, the development of national contingency plans in the light of their eventual participation within the framework of a regional mosaic would be advantageous. It prevents countries from having to overplan in the light of their resources, a corollary which an isolationist policy would necessarily imply. Furthermore an overall regional contingency plan would in itself not necessarily have to be an over-riding master plan, but the pooling together of national (and possibly sub-regional) plans, to provide the framework for mutual assistance without in any way infringing on the souvereign rights or policies of any individual state.

In such regional arrangements the mechanism of collecting and disseminating information, and for integrating the various planning components, should be centralised. The actual operational material will necessarily have to remain decentralized in the respective countries. In order to achieve harmonization, as well as to prevent duplication, it is obviously essential that national oil pollution contingency plans be grouped together in sub-regional and regional networks.

The importance of continued liaison with expertise on a continental, or even global scale, both between regions and their Regional Oil Combating Centre, as well as between Regional Oil Combating Centres themselves, cannot be overemphasized (3).

The Regional Oil Combating Centre for the Mediterranean, set up jointly by UNEP, IMCO, and the Maltese Government, should serve as a prototype.

Its basic objectives are to facilitate cooperation among the Mediterranean States in the event of a massive oil spillage, especially where there are grave and imminent dangers to the marine environment, and to help them develop their own anti-pollution capabilities. It has no operational role in combating pollution emergencies directly. It has the task of facilitating information exchange, communications and technological cooperation as well as contingency planning in the coastal States and areas of the region at risk. The Centre also encourages and develops training programmes for the region.

The setting up of such centres involves comparatively small financial committments. The eventual running of the establishment can be carried out by a very small number of personnel for each centre. A small number of such centres (five to eight) strategically placed around the coasts of Europe will provide an efficient network capable of coordinating efforts of regions, or whole countries together efficiently in the case of major oil pollution disasters.

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The Council of Europe is therefore urged to :

a. Encourage bilateral and multilateral agreements against oil pollution, between states riparian to the same sea or ocean,

b. Encourage and promote, with all means available, the setting up of strategically placed Regional Oil Combating Centres and possibly act as the focal point of subsequent interrelationships between these proposed Regional Centres.

3. Adequate Compensation for Damages :

Although the "polluter pays" principle is accepted allround, in pratice one finds that at times the polluter remains unrecognized, at others the definition of pollution is debated and on other occasions payment is limited to a maximum sum and no limits made on the length of time compensation proceedings should take to arrive at a settlement.

This shows that present agreements currently regulating compensation from the polluter, have serious shortcomings. The principal agreements concerning pollution liability are two volontary agreements (the Tanker Owoners Voluntary Agreement concerning liability for Oil Pollution (TOVALOP), and the Contract regarding an Interim Supplement to tankers liability for Oil Pollution (CRISTAL), paid for by the oil companies), and two international Conventions - the 1969 Civil Liability Convention on Oil Pollution Damage which eame into force in June 1975 and has been ratified by some 35 countries, and the 1971 Fund Convention which is not yet in force, and which will provide additional compensation.

The shipowners themselves arrange their liability insurance by joining a protection and indemnity association, called P. and J. Clubs. This practice incidentally removes the deterrent effect of fines.

Amongst the sevious shortcomings of these agreements and conventions, which need urgent revision, one can mention the fact that the limits of liability (£ sterling 9 million in the 1969 Convention, and $ 54 million in the 1971 Convention), apart from proving to be not enough for major disasters, are not inflation proof, and inflation has substantially eroded the ceilings established years ago. In addition no interest is paid, or any allowance made for inflation where immediate or interim payment is not made pending legal wrangles. Payment can be withheld, for example, pending arbitration following disagreement on what constitutes"reasonable clearance methods".

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Compensation under existing conventions does not cover spills of non-persistent oils or damage by chemicals and other hazardous substances. Spills from ships other than tankers are not included, and liability is only for damage in territorial waters. Pollution from unidentifiable sources is not included, and CRISTAL does not cover spills from unladen tankers.

The conventions and voluntary agreements do not make good for protective measures taken, to avoid pollution, and the same applies for damages which cannot be expressed in monetary terms. Enough to say that the actual definition of "damage" as such is still not settled, and that compensation claims handled by TOVALOP are confidential and hence not subject to public scrutiny.

Delay in settlement of claims is unacceptable as coastal Authorities may suffer hardship in such instances, and a system of reimbursement which is simpler and quicker is required.

Central government should be responsible (partly or wholly) for the reimbursement of the cost of operations and compensation, and for the subsequent presentation of costs to the owners or operators of the responsible vessel or vessels, where identification is possible. More research in finding ways and means of identifying oil from a particular vessel should be encouraged.

The proposal of setting up of a compensation fund at a European level financed by a levy on the oil industry or its insurers, which would speedily reimburse, in full, the cost to a Local Authority of cleaning up pollution damage from oil spills of unknown origin, (4), should be extended to include also oil spills from "known" origin, and also the cost of approved prevention works, and measures to avoid oil pollution e.g. costs of planning and stockpiling of equipment.

In addition the 1910 Salvage Convention should be urgently reviewed so as to take into consideration the interests of third parties i.e. the coastal regions whose coastline is polluted.

It is worth noting that the International Tanker Owners Pollution Federation have started building a data-bank on a computer programme on all oil spills, on antipollution equipment available all over the world, its locality, quantity, availability cost, etc . (5).

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The Council of Europe is therefore urged to do its utmost and campaign for an urgent revision of existing Civil Liability and Salvage Conventions and Agreements, in the light of the recommendations and shortcomings mentioned above ;the aim should be to provide a quicker and more adequate compensation for any type of pollution ; such compensation to cover all aspects of the prevention and actual cleaning up of pollution, as well as the effect such pollution may have on the economy of the region affected (e.g. fishing, tourism etc.).

4. Ship design and navigational apparatus :

The larger part of oil pollution of the seas is not caused by spectacular tanker accidents, but by routine drainage of loaded oil residues carried out by tankers, and the drainage of used oil and grease carried out by all vessels navigating on the seas.

Efficient methods for cleaning loading tanks and thus reducing considerably oil pollution of the seas exist, but for various reasons are not used.

There also exists a Classification Society which lays down strict rules for the type and quality of material used in shipbuilding as well as the quality of the equipment installed, the enforcement of duplication of many key pieces and "back up" facilities for other essential items of equipement on board.

On board equipment can be classified into

Navigational equipment (radar, radio, detection and finding equipment, gyro compass, echo Sounder, Decca navigator),

Shipboard Safety Equipment (Inert gas systems),

Anti pollution equipment (oil content monitor, oil and water separators for bilge and ballast water) and,

Steering and propulsion systems.

This aspect of marine pollution is looked after by two major conventions :

The Solas Convention (Safety of Life at Sea), whose latest version of 1974 was modified in 1978. It provides for international safety standards in the design of construction, equipment, navigation and radio communication aids, for cargo handling and other vessels.

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The other convention for the prevention of pollution from ships, MARPOL, modified by a protocol of 1978, contains regulations for the prevention and control of deliberate and accidental pollution from ships by oil noxious chemicals carried in bulk, harmful substances in packaged form, and ship borne sewage and garbage.

Both these conventions have been made more specific and strict following the Tanker Safety and Pollution Prevention (TSPP) Conference held by IMCO in London in February 1978, where important regulations concerning the installation of segregated ballast tanks (SBT), and the limitation of the size of the loading tanks were agreed to. According to these regulations (see Appendix newly built tankers with a capacity of 20,000 tons dwt and more must incorporate segregated water ballast tanks.

For tankers with a capacity of 40,000 tons dwt and more, which are already in service, there is an option of installation of SBT plus inert gas systems (IGS), or else Crude Oil Washing System (COW), or clean ballast tanks plus IGS.

Loading tanks presently must not have a capacity above 40,000 c.metres. For tankers built after 1st January 1972, the size of loading tanks is regulated by IMCO as being 400 dwt in tons, with a maximum of 40,000 c. metres. In addition certain regulations dealing with double bottoms, collision avoidance aids, and double line up of steering and radar installations were considered.

A special clause conceded that where technological improvements and alternatives could be shown to give the same degree of protection, these alternatives would be permitted.

About the Tanker Safety and Pollution Prevention Conference, it has been said (6) that the governments of several EC countries have failed to adopt a progressive attitude in these negociations. It was also deplored that the EC Council of Ministers did not approve a compelling directive for the ratification of the IMCO rules. A compromise adopted later, recommending the various member states to ratify the IMCO conventions is not enough. This criticism is well in line with general opinion that what is needed is not new standards and regulations, but ratification and implementation of existing ones.

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From the technical point of view, opinions differ as to what measures should be adopted. Quite representative of general current opinion are the proposals put forward by the European Metalworkers Federation (7). These include limitation of tanker size to 150,000 tons dwt, double hull arrangements for tankers carrying dangerous chimicals, separate ballast tanks for all tankers, limitation of loading tank volume to 10,000 c.metres, and inertization of all loading and ballast tanks by installation of inert gas systems, which should be a part of the vessel's equipment, irrespective of size and not restricted to larger tankers only as foreseen by IMCO.

Other recommendations include the installation of two autonomous and one auxiliary steering equipment, two autonomous radar installations, two autonomously working gyro compasses, travel speed indicating systems, a hyperbolic navigation system (Decca, Loran) and a radio direction finding station. A Decca navigation system is claimed for the reason that the radio direction finder as foreseen by IMCO does no longer correspond to the present technical level, if the ship navigates near the shore.

A dual VHF radio telephone must also be available, and an efficient emergency power supply is imperative, as the ship must dispose of driving power at any moment.

Other recommendations envisage the availability of adequate fire extinguishing equipment, and the incorporation of a device for making towage more quick and easy on all tankers, 'fore (-) and (-) 'aft.

The U.K. view at the Tanker Safety and Pollution Prevention Conference was that the proposed recommendations concerning the installation of Separate Ballast Tanks meant an unnecessarily expensive way of reducing pollution as the crude oil washing System achieved the same objective at a lower cost. Crude oil washing is carried out during the discharging operation and after the cargo tanks have been made safe by inert gas.

In a joint conference of the Institute of Marine Engineers, and the Royal Institute of Naval Architects (December 7th,1978) (8), it was pointed out that SBT requirements bring about a reduction in cargo carrying capacity (30% to 40% in a 400,000 tons dwt tanker, depending on the draught), and will influence strongly future tanker design, building costs, cargo deadweight, handling at sea, etc. The problem of accelerated corrosion rate in SBT, and the problem of the resultant stress of the plating due to the pressure difference between tanks in the loaded and the ballast state were also considered.

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On the other hand ships fitted with crude oil washing systems have a reduced pollution potential if properly operated, have more space for cargo, spend less time in water washing, and are more acceptable for chartering on the open market. The opinion was expressed that the majority of owners will opt for this system.

On the issue of "double bottoms" it was argued that this would have little effect in reducing pollution, and that it was dubious whether it would be of any value in groundings.

As far as Inert Gas Systems, which are intended to produce a non explosive atmosphere in each cargo tank, by keeping the level of oxygen below 5%, and which have been fitted to tankers in increasing numbers since the early 1960s, there is agreement and recommendation all round.

The Load on Top (LOT) system is also recommended but this is not applicable to tankers flying short routes.

To adhere to these requirements, owners will clearly make their final selection from the available options, from economic considerations such as loss of cargo carrying potential, direct cost of conversion and financing, time out of service, on board personnel requirements, quality, training and members, increased maintenance, and operational factors, such as speed, consumption and discharge time. The greater capital cost of ships and larger fuel bills due to increased-depth and thus more resistance, will result in a rise in total transportation costs of about 6-10%. This represents a vast amount of money, and so alternative methods of dealing with oily ballast should not be ignored, such as oil-water separation techniques, which have greatly improved in the last few years (9).

Considering the above it is therefore recommended that member States immediately ratify the convention and minutes presented by IMCO and ensure that these agreements are implemented as soon as possible within the European Community.

Support must also be given to the European Community in its statement submitted to the Council of Ministers saying that "in order to avoid impair competition there must be a stronger resistance to ships which do not observe minimum standards for safety and security, or do not observe minimum social provisions, by the introduction or by intensifying the necessary measures on community level. This should be done either unilaterally or within the limits of international actions (eg. refusal of entry permit into ports within the Community in case of non observation)".

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5. Crew Training, Qualifications and Behaviour :

The greatest single cause of tanker accidents is human fallibility. Most accidents are caused by crew error, navigation equipment failure, or faulty navigation. The best and latest equipment by itself will not reduce accidents. Properly trained and duly certified crews are needed to use the equipment properly.

A ship may be considered as sub-standard if, in spite of having proper design and equipment, it lacks proper maintenance from an incompetent crew. On the other hand, the crew may be competent but not enough in number (insufficient), or else there may be enough even who is competent, but who is enable to communicate efficiently with each other due to, par example, language difficulties (10).

The same applies to personnel operating on oil rigs. In the report of the Commission investigating the BRAVO blow-out, it was stated that the Norwegian Petroleum Directorate; before granting approval of the programme, ought to have required an organisational plan of the project including information about the qualifications of personnel. It was found that none of the persons in leading positions who were directly involved in the project , except for the drilling engineer, had theoretical training corresponding to the minimum requirements for drilling personnel in leading positions as prescribed in the Norwegian regulations for mobile platforms.

Such situations should not be tolerated especially in view of existing I.L.O. Standards on minimum qualifications of seamen, and the fact that IMCO itself held a conference in London (1978) on mandatory minimum requirements for training of crews on tankers, chemical carriers and on gas ships.

The more equipment becomes sophisticated, the more stress should be laid on the training of personnel, and on inspections of the various safety devices and on the people who operate them. More time and money should be spent on all aspects of crew training.

One important consideration that should be enforced is that the master of a ship in distress should be convinced or instructed to seek assistance at the earliest possible moment.

Crew training courses should be organised on a national or international level, and the use of simulators, as in the aviation industry, should contribute greatly to test people under stress conditions. National Governments are under the obligation of being strict in their requirements for training and certification purposes of potential crew members.

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A practical measure would be for the Council of Europe to instruct its member countries to exert more stringent control in this respect (crew training, certification and engagement) following and implementing scrupulously the international standards and agreements already existing in this field.

6. Port Authority Control and Inspection

As shipping is essentially international in character, agreements and conventions controlling pollution from shipping will have to be implemented on an international scale. Most of the implementation and control, however, will have to be done at local level.

As long as a ship is sailing in international waters, there is no authorization, up to now, to anyone or any constituted body, national or international, to board that ship, and execute any power (such as inspection).

Hopefully, in the future, this might become a reality when international sea-traffic policemen will one day start patrolling the high seas. For the time being only two alternatives exist : reporting a ship caught polluting the sea to its country of registration, and secondly, boarding and inspection by national authorities only if a ship is in harbour or in territorial waters.

The harbour authorities are the people who really come into contact with a ship, and it is them who can decide as to whether a ship is up to the required standards or not. These authorities are empowered by International Conventions to impound a ship and to refuse it permission to leave port if it is found to be sub-standard.

This presupposes the power of inspection. Such power is given by almost all national legislations, and covers both the ship as such, and its equipment, as well as its cargo. The proper maintenance and functioning of all navigation and anti-pollution equipment are important considerations. So is the vetting of the crew's qualifications. The keeping of records (such as an "oil book") is also important and has to be inspected as a matter of routine.

All details relating to loading and unloading of oil, transference of oil from one tank to another, as well as the fate of ballast water will have to be included in such oil books.

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If such inspections were done regularly on an agreed basis throughout all ports of call, a very efficient deterrent effect to sub-standard ships and crews will have been established. On the basis of such inspections, a "black list" of ships can then be produced , and primitive measures be taken against sub-standard ships or repeated offenders. Such measures could include boycotting, refusal of entry permit for port, and also court action in case of polluters.

Such inspections will also help in the formulation of a "technical health bill" for every ship, something which has been in force for many years already in the aviation industry - no captain worth his salt will take under his command an aircraft unless he is satisfied that it is technically healthy and safe to fly.

Member countries of the Council of Europe should adopt a uniform policy of standards and inspection at all ports of call, update national legislation in this respect, and enforce it both in the preventive and the punitive state.

It should also be the Council of Europe's concern to see that where international legislation is lacking in giving FULL authority to Port Authorities control, such legislation should be amended in this direction.

7. Ancillary Facilities :

A. Tank cleaning facilities :

It has been pointed out that many oil slicks coming from "unknown sources" and the chronic presence of tar balls on beaches are the result of dumping of oily wastes at sea. These oily residues result from used engine oil, polluted ballast water, and from the result of tank cleaning by sea water while en route.

What makes ship captains decide to do this ? Difficult to tell. Finding out all the culprits is also difficult. A positive measure would be to induce captains to carry out such procedure in ports, provided with adequate facilities, by making such facilities available.

Availability of such facilities is a must if one expects to have more cooperation in keeping our seas clean.

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Going through the replies to the questionnaire, one gets the impression that such facilities are not always available and adequate. The impression is also obtained that apart from one or two countries, there is not enough legislation to see to it that the capacity of such facilities be enlarged pari passu with the increase in the volume of shipping (especially tankers) making use of a particular port.

More information on such facilities is available in the IMCO publication "Reception facilities in Ports" which contains information provided by 34 countries in response to a questionnaire on the facilities in Ports for the reception of oil wastes from ships and on oil waste treatment and effluents' quality.

Facing these important problems, the IMCO Marine Environment Protection Committee issued a circular (MEPC/ Circular 82, 22 nd February 1980) by which Governments are invited to take the following measures in order to alleviate the situation.

1. Inform IMCO on the ports at which ships encounter difficulties in disposing oily residues.

2. Encourage port authorities to make available to ship's agents relevant information.

3. Ship masters should, well in advance, inform port authorities of the type and quantity of wastes to be disposed.

4. Costs for receiving wastes should not be disincentive.

5. Formalities (particularly customs formalities) should be as simple as possible.

6. Authorities should be encouraged to provide or improve both mobile and permanent oily wastes reception facilities.

7. Shipowners should be encouraged to minimize the quality of waste to be disposed by using on board separators, filters, incinerators, etc...

8. Comprehensive wastes treatment on board the ships' (effluent not exceeding 15 p.p.m.) should also be encouraged.

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According to the 1973 Marpol Convention as modified by the 1978 Protocol, which is expected to enter into force by the declared target date of June 1981, it is intended that there should be no more intentional discharge into the Mediterranean Sea of waste oil from any oil tanker or ship of 400 gross tons or over, while any discharge from ships below 400 gross tons is to be very restricted.

The provision of Mediterranean countries of adequate reception facilities for oily residues is essential to reach this objective. At present, out of 19 oil terminals in the Mediterranean, ten terminals, which between them handle around 190 million tons of petroleum oil a year, do not have any facilities for handling ballast water.

The lack of reception facilities, as well as the complex formalities required for their use, or the unawareness of the ship's agents of their existence, are important factors in preventing the safe disposal of oily wastes.

Concerning the Mediterranean region, IMCO and UNEP are conducting a feasibility study on reception facilities for selected ports in the region as a part of the Mediterranean Programme Activities. Following this study IMCO is considering a project entitled "Advisory Services concerning the Development of Reception Facilities for Selected Ports in a Special Area - Mediterranean " which would provide for a small team of experts in the treatment and disposal of waste oils and oily ballast water.

As a matter of fact a two year programme is to be organised to assist four Mediterranean Countries in drawing up technical specifications for facilities to treat oil waste and ballast. Libya, Malta, Tunisia and Yugoslavia would be helped to combat pollution in the Mediterranean more effectively.

The Baltic Sea, as well as the Red and the Black Sea, together with the Mediterranean, have been designated as Special Areas.

The deadline for construction of facilities to treat oily waste and ballast from ships was January 1st 1977, but few countries had met this deadline. With the deepening of the Suez Canal, as a tanker route, the Mediterranean was becoming increasingly important.

Many tankers worked exclusively in the Mediterranean, where voyages are too short to implement the Load on Top (LOT) system. Hence reception facilities are vital. It has been calculated that significant investment is required in eleven of the Mediterranean countries visited in an IMCO study of 1978, to bring reception facilities to the required standards. A small team of experts at the Malta Centre would help to develop contingency plans and other measures designed to combat pollution.

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Libya's involvement in this project was regarded favourably as facilities there required special attention. Maltese facilities also needed improvement now that the 300,000 dwt. dry dock was being used, and tankers needed to be properly cleaned and gas freed before dry docking.

A final word has also to be said in respect of disposal facilities for oil, oily residues,oil contaminated sand and shale, as well as other residues resulting from clean up operations of oil polluted beaches.

Following clean up operations, a major problem has always been the disposal of polluted material. Mobile or stationary plants for the disposal of such material should be available in susceptible areas.

In view of the above it should be recommended that :

(i) Council of Europe countries should provide adequate reception facilities for ship generated oily residues,or other noxious chemical residues, be they gases, liquids, or solids ; avoid complex formalities required for the use thereof ; and endeavour to make existing facilities better known to ship's agents and accessible to ship's captains ;

(ii) Endorse IMCO Marine Environment Protection Committee Circular 82 of 22nd Feb. 1980 ;

(iii) Encourage IMCO and UNEP to pursue their project entitled "Advisory Services concerning the Development of Reception Facilities for Selected Ports in a Special Area - Mediterranean", and invite them to investigate the possibility of applying such services to other regions as well ;

(iv) Make it mandatory, where facilities exist, to prohibit a ship from leaving port until adequate cleaning of tanks, and disposal of waste oil has taken place ;

(v) To make provision for mobile and for stationary plants, to deal with oil polluted material in particularly susceptible regions.

B. Towage facilities

When a ship gets into trouble, the sooner competent authorities are informed, or assistance requested, the better the chances of avoiding a disaster.

Towage is by no means the only form of assistance a stricken ship can get, but it is definitely the most important. A ship crippled by an engine failure, or other breakdown of navigational apparatus, will have to be towed before it starts drifting helplessly towards shore. A grounded tanker will have to be pulled free. So will a ship involved in a collision. Towing out to less dangerous waters, away from the shore, or to a "port of refuge" also involves the services of powerful tugs.

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This service is a must, and is most needed in the more dangerous and susceptible regions where shipping is heavy or the waterways narrow.

The International Salvage Union is a worldwide organisation with about 20 professional salvage company members owning and managing a large number of sophisticated salvage tugs and vessels. These tugs keep watch at salvage stations around the globe, their placing being determined by such factors as season, type of weather, winds and storms to be expected, and other factors. (11).

Over the last two decades, however, this tendency to station powerful sophisticated and expensive salvage tugs at key strategic points is diminishing. The main reason is that up to now salvage assistance is rendered on the "no cure, no pay" contract (Lloyds Form of Salvage Assistance), payment being effected after the salvage operation, the amount being arrived at by an arbitrator.

In recent years, owners and underwriters are becoming more and more reluctant to accept the universal use of such contracts. They tend more to encourage the negociation of a specific agreement for each particular case, relying on casual operators rather than on the services of the professional station keeping salvage tugs, with their sophisticated equipment and their expensive experienced well trained crews.

Without actually going into the pros and cons of employing a professional or a casual salvage operator, it is to be admitted that in the absence of standardised procedures, abuses will definitely arise such as haggling over prices, price undercutting, and possibly lowering of standards, resulting most surely in more time lost, and wasting of precious hours.

It is therefore to be recommended that :

(i) Masters of ships in distress are to notify of their troubles immediately (the proposed Regional Centres could play an important role in this respect) ;

(ii) In territorial waters, the threatened country should have full powers to deal with the ship and its cargo, including the imposition of compulsory assistance, such as towage ;

(iii) A more practical formula, based on size of ship, value of cargo, duration and difficulty of salvage operation, etc..., should be found to make price quoting and compensation claims for salvage operations more straightforward.

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Other desiderata would be the establishment of internationally recognised "ports of refuge" to which a stricken ship can be taken, and where it can be dealt with without fear of damaging the environment.

Also it would be ideal for powerful tug boats, to fly continuously dangerous waters so as to be able to render assitance promptly.

8. Traffic Seperation Schemes and Sea Traffic Control

Considering the amount of shipping flying the seas and oceans, one has to admit that disasters (and the consequent damage) are comparatively rare. However a look at the map shows that certain areas are more "accident prone". Such areas correspond to relatively narrow waterways through which shipping is particularly heavy.

To avoid shipping collisions in congested areas where a lot of shipping converges, the concept of separating opposing streams of traffic was devised in the mid 60s, leading to the launching of the Dover Strait Separation Scheme in 1967. Since then about hundred such schemes exist all over the world e.g. English Channel, Strait of Gibraltar, Sound between Denmark and Sweden.

In order to ensure maximum compliance with such schemes, adoption by IMCO is of considerable importance. The International Collisions Regulations apply only to those schemes adopted by IMCO. All schemes in extraterritorial waters have to be submitted to IMCO for discussion and international adoption. However a state may introduce a routing scheme in its territorial water without international agreement.

Ships are not enforced to use traffic separation schemes and are at liberty to steam right outside such schemes, and avoid traffic lanes altogether. In narrow straits, however, following traffic lanes becomes almost mandatory. One general principle that has been adopted following intensive study is that traffic separation schemes should be as short as possible to avoid unnecessary and dangerous concentration of traffic.

It has been suggested from some quarters that sea traffic should be organised on the same basis as air traffic, with"sea spaces", "sea traffic controllers" etc.. etc.. For various technical reasons this is not practicable. However a number of measures have already been taken into consideration, which to a certain extent will contribute towards more efficient control of shipping.

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Compulsory pilotage in certain narrow waters, and the prohibition of keeping close inshore unless approaching port are two such measures. Another suggestion is for masters of ship to report their arrival in national waters, possibly to a Regional Centre, giving information about their proposed course, nature of cargo, quantity, and other relevant information.

Such an idea which has been termed "way point" has already been taken up and earmarked for further study by the Committee on Maritime Safety of IMCO.

Radar Surveillance and VHF communication are systems which have been in use in major European ports for many years. This is also the basis of the Channel Navigation Information Service set up by the United Kingdom and France. This service is an information service and not a control system. Regular broadcasts are made giving information on the traffic situation in the area, including the rules of the traffic separation scheme. Such vessels are reported to their flag state for appropriate action to be taken.

Similar arrangements, making use of radio stations designated for that purpose, have been arrived at between France and Italy, regulating navigation in the strait of Bonifacio, between Corsica and Sardinia. A resolution to this effect was adopted by IMCO in November 1974, recommending Governments to requests masters of laden oil tankers and of ships transporting dangerous chemicals or substances likely to pollute the sea or the coastline in case of accident, and of more than 5000 gross register tons, to avoid passing through the strait of Bonifacio. The resolution also endorses a system of surveillance set up by the Italian and French Governments.

Other measures made available as a result of the wonders of modern science include undoubtedly the use of Remote Sensing Techniques (RST).

Remote Sensing from space and from aircraft using a range of different sensors, operating in the visible, infrared, and micro wave regions, are considered by many to be the most promising source of information about the surface of the earth and the surface of the oceans. Such techniques make possible information about the general state of the marine environment. One can monitor local weather and the state of the Sea, ship movements, platform and fisheries operations, sea-ice boundaries, as well as iceberg movements.

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Remote sensing can also be used to keep track of a reported oil spill and obtain information as to origin, size, direction, etc... General surveillance of the oceans and seas can be carried out by satellite remote sensing, whereas more detailed monitoring of a polluted area can be obtained by properly equipped aircraft. (see "Télédétection des Pollutions par Hydrocarbures" Rapport préliminaire published by CNEXO, IFF, and IGN).

The first satellite for monitoring of the ocean's surface was launched by NASA in June 1978 - SEASAT I. Data from this satellite is being received in Europe through a station set up by ESA in the UK ; and a wide range of experiments are being carried out to find out the usefulness of these techniques in pratice.

France is already using remote sensing techniques from small aircraft to control and survey deballasting operations in the open sea. This is coupled to aerial photography and also sample taking.

Similar "Surveillance and Monitoring Services" are already being offered by privately owned commercial enterprises, offering services consisting in instant aerial surveillance and monitoring, as well as infrared and ultra-violet scanning in case of oil accidents.

Such methods do help to catch more polluters "red handed". However as stated earlier the most stringent control can be obtained best by international patrolling of the seas, and by stricter control of ships in port - log book inspections, examination of ballast water etc...

The Council of Europe countries possibly through the competent international organisation like IMCO, should agree to and support the setting up of traffic separation schemes on short routes in really crowded and dangerous waterways.

Compulsory pilotage in ports and narrow waterways should also be seriously considered, as well as the further development of the "way point" system.

In addition, Council of Europe countries should encourage the further development of any form of aerial remote sensing (satellite and aircraft), radar or radio reconnaissance system of the oceans and seas, and provide measures for the diffusion of relevant data thus obtained to all interested ships in the vicinity, possibly through adequately equipped regional centres.

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9. Adequate Labelling of Cargo

A problem faced by certain European regions, especially those whose shores are bathed by the North East Atlantic e.g. Isle of Wight, Azores, etc...., is that of containers or drums (containing material which often proves to be of a hazardous nature) being washed ashore.

The Isle of Whight alone, between November 1979 and February 1980, received on its shores no less than 983 containers and 6 drums.

Because of the marked increase in the quantity and the variety of chemicals being shipped, it has been calculated that roughly 15-20% of all containers, canisters or drums washed ashore contain hazardous chemicals or an industrial chemical product with dangerous constituents. Things have come to a stage where an unmarked container will have to be regarded as containing dangerous chemicals unless proved otherwise.

This means that coastal regions which suffer from this type of "chronic pollution" will have to equip themselves adequately to deal with such events. This involves the maintenance of personnel adequately trained to deal with such dangerous chemicals, laboratory facilities to help identify the chemicals and obviously the services of qualified analytical chemists.

The cost of recovering, analysing, identifying and disposing of such chemicals, is at times prohibitive. The expenses could prove more than what a local authority can afford, or-to put it in a better way-should afford.

Before going any further, it should be stated here categorically that, as in oil pollution emergencies, central governments should extend all help and assistance to supplement the resources of the regional or local emergency services. This should include laboratory facilities, trained personnel, and also equipment.

This help is more than justified when one considers two points. Firstly the fact that most containers washed ashore, either do not have any marking at all, or else have had their marking rendered illegible and meaningless due to the scouring action of waves, shingle, sand, etc.. This means that for one thing the origin of such canisters cannot be traced, andso no "polluter" can be charged.

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Secondly, even if the "polluter" is recognised, it is still difficult to obtain damages because as yet the "polluter pays" principle has not been enacted into the existing legislation governing the transportation of hazardous chemicals by sea. In addition, there is still no compensation scheme, statutory provision, voluntary agreement for compensation, or any interim agreement to cover any other pollutant apart from hydrocarbons.

Up to now there is not any indication at international level to embody the principle that those responsible for causing chemical pollution of coastal areas should meet the cost of dealing with such pollution.

Recent discussions at IMCO level, of the International Convention for the Prevention of Pollution from Ships, came to the conclusion that up to now there was insufficient information available on the transportation of harmful substances in packaged form, which would warrant the inclusion of a mandatory requirement for member states to impose a statutory liability for compensation as is done for oil pollution.

Other factors which make this problem more difficult are :

The fact that for security reasons and in the interest of ship and crew safety, according to regulations, certain hazardous chemicals have to be carried as deck cargo, making it more liable to be washed away during a storm.

Secondly, even though the Chemical Industries Association recognises that a company causing hazardous goods to be conveyed in packaged form should satisfy itself that suitable marking and labelling is used, and recommends a code of practice, yet when hazardous goods are carried by sea, there is no statutory requirement placed upon shippers to do so. When it comes to marking requirements, it has to be noted that conditions regulating road or rail carriage of hazardous chemicals are far more strict than those applying to sea carriage.

There is no lack of international marking or labelling systems for containers of hazardous chemicals. The most frequently used ones are the Voluntary Code of EEC Hazard Symbols, and the U.N. Number Code for Hazardous Chemicals. (12).

While on the subject of labelling, one could also make reference to the increasing number of oil spills from unidentified sources. As yet it is difficult to detect the origin of such spills. However as the science of "oil spill detection" becomes more precise, the oil companies and the ship captains will become more cautious and careful.

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The damages caused by oil slicks may amount to thousands of pounds, and a more precise method of identification of the oil, and where it came from, becomes more and more pressing.

Research is being carried out on the fact that because of its chemical make up, any oil has individual characteristics. Like the human fingerprint, each oil from a particular source, be it an oil well, a tank in a supertanker, the pipe of a refinery, or a leak from a storage tank, has its own set of fingerprints.

By using the technique of gas chromatography, an experienced operator can get the "fingerprints" of even a small drop of oil. In one experiment one could indentify the source of spilled oil between twenty six tankers, even though each of them carried petrolium products from the same region (13).

If in addition to these physical characteristics the oil is "tagged" to make it more easily identifiable, the problem of identification becomes more easy to solve (14).

It is earnestly hoped that such methods of identification will be put to practical use in the near future.

In view of the foregoing considerations, the Council of Europe should :

Endeavour to promote the adoption of a universally acceptable system of INDELIBLE markings on containers of hazardous chemicals transported by sea.

Exhort shipping companies to adopt a system of better and more secure storage of such chemicals on board, without endangering the security and safety of ship and crew.

Encourage central governments of member states, in the event of pollution by hazardous substances, to extend the same help and assistance to local authorities, as is usually extended in cases of oil pollution.

Campaign in favour of extending all protocols, agreements and conventions dealing with pollution control and compensation, to include besides pollution by hydrocarbons, also pollution by hazardous chemicals.

Encourage further research into the system of "oil tagging" and its subsequent application in practice.

Study further the present situation regarding the sea transportation of hazardous substances in packaged form, and make better known the plight of European Coastal regions afflicted with this form of maritime pollution.

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10. Research into anti-pollution measures and agents

In dealing with oil spills, or contamination of the beaches or shores, the present available methods are two : mechanical removal or chemical treatment, or a combination of both.

Mechanical removal is obviously the best method as it leaves the flora and the fauna in the affected area untouched. However, up to now the available mechanical methods are not very effective. Those that prove to be effective are not suitable for all types of weather conditions, or for different types of oils. The tendency is to rely more and more on chemical means of dispersing the oil.

Unfortunately, chemical dispersants can be quite toxic, and their indiscriminate use can damage the ecosystem more than it would have been damaged by the spilled hydrocarbon itself.

From the replies to our questionnaire and the copies of contingency plans sent to us, it was quite evident that many regions are well aware of this. As a matter of fact many plans specify in what areas of their coastline chemicals are to be used, and where not. The vulnerability of the flora and fauna to certain anti-spill techniques is pointed out, and the most adequate means of combating oil spill recommended.

Toxicity studies are carried out regularly on all dispersants that appear on the market.

The U.K., for example, operates a licensing system approving the use of certain chemicals in certain environments. The results of such tests are available to all the signatory states of the Bonn Agreement through its technical working party.

This concern with toxicity was discussed in depth some time ago in the 'ad hoc' Expert meeting held by the Industry and Environment Office of UNEP on the application and environmental effects of oil spill chemicals.

In may 1979, a symposium (PROTECMAR) was held in Toulon, to collect scientific, technical, and operational data on the treatment of oil slicks at sea by various dispersants.

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At present there is too much reliance on chemical dispersants along the European coasts, and it is noteworthy that the advocates of mechanical means, i.e. the Scandinavian countries are doing a lot of promotion and research to develop an effective, adaptable, and commercially acceptable method of sucking, skimming, or containing the spilled oil, e.g. specially equipped antipollution vessels, special barriers, booms etc...

Research in chemical methods on the other hand is moving in the direction of products or agents that are less and less toxic, or preferably neutral. One can mention recent developments like the new type of "herder" used in powder form, for the treatment of thin films of oil (POLLUSTOP) ; a demulsifier to break water/oil emulsions to achieve good fluidization and separation of water and solid material from any "chocolate mousse" emulsion ; and the recently developed Japanese system of "gelatinization" of the spilled oil and recovery by netting.

This field is so vast, and new methods are being experimented upon and launched so quickly that going into detail in this report would be superfluous. A good reference on this subject would be "Inventaire des moyens matériels nécessaires pour combattre la pollution marine par les hydrocarbures" published by ASTEO.

In this context the role of the Council of Europe should be to encourage and promote research into the best mechanical and/ or chemical methods of cleaning oil spills ; cooperate with international agencies or national centres involved in such research ; and encourage member countries to include in their contingency plans, maps showing the varying degrees of vulnerability of certain areas of coastline to the various methods of combating oil spills that are at present available.

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