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Long-Term Programme for Pollution Monitoring and Research
in the Mediterranean Sea (MED POL - PHASE II)

LEGAL, ADMINISTRATIVE AND TECHNICAL ARRANGEMENTS FOR THE PROTECTION
OF THE MEDITERRANEAN SEA FROM PETROLEUM HYDROCARBON POLLUTION
(document prepared by the International Maritime Organization)

C O N T E N T S

	<u>Pages</u>
SUMMARY	1
INTRODUCTION	2
1. LEGAL STATUS OF THE MEDITERRANEAN SEA AREA	4 - 10
International Convention in Force in Mediterranean Sea Area	4
1954 OILPOL with 1969 Amendments	4 - 6
MARPOL 73/78	6
Definition of "Special Area"	6 - 8
Obligations of Mediterranean Coastal States Parties to MARPOL 73/78	8
Obligations of Mediterranean Coastal States which are also members of the European Economic Community	9
Present position and future action	9 - 10
2. RECEPTION FACILITIES	10 - 19
Requirements of MARPOL 73/78	10 - 12
Deficiencies in Reception and Treatment Facilities in Mediterranean Sea area	13 - 14
Development which may affect the volume of reception facilities required to meet present and future requirements	15
Segregated Ballast Tankers	15
Clean Ballast Tankers	15
Crude Oil Washing	15
Tankers for which reception facilities will be required	16
Size of Tankers and Volume of Oil Movements	16
Environmental and Economic Factors	16 - 18
Sludge and Bilge Collection Facilities	19
3. DISPOSAL PROBLEMS WITH MATERIAL RECEIVED	19 - 20
4. ACCIDENT STATISTICS	20 - 22
Oil Spills in the Mediterranean Sea Area	20 - 21
Role of the Regional Oil Combating Centre (ROCC) in Emergencies	21 - 22

	<u>Pages</u>
5. ROLE OF ROCC IN REGIONAL CO-OPERATION	23 - 24
Establishment of ROCC	23
Relationship with UNEP and IMO	23
Limitations on the Role of ROCC	24
Enhancement of the Role of ROCC	24
6. CONTINGENCY PLANNING IN THE MEDITERRANEAN SEA AREA	25 - 32
The need for National Contingency Plans and mutual assistance arrangements	25
Mediterranean States with operational and tested plans	25
Mediterranean States in process of developing national contingency plans	26
States which have not reported preparation of national contingency plans	26
Review of each State's of readiness to respond to major pollution incident	26 - 32
7. TRAINING	32 - 36
Training needs	32 - 33
Provision of Training	33 - 34
The role of ROCC in training	34 - 35
Future training areas to which ROCC could contribute	36
8. INFORMATION EXCHANGE AND COMMUNICATIONS	36 - 37
RECOMMENDATIONS	38 - 39
REFERENCES	40 - 41

SUMMARY

The Barcelona Convention has been in force for almost eight years and the MARPOL 73/78 Convention has been in force for nearly one year.

Despite these two instruments, which seek to make major improvements in pollution of the sea by petroleum hydrocarbons, much remains to be done before the Mediterranean Sea can truly become the "Special Area" envisaged in MARPOL 73/78.

Particular emphasis needs to be placed on:

1. Reception facilities

Nations which are Parties to MARPOL 73/78 are unable to comply with its provisions due to lack of reception facilities in the Mediterranean Sea area, both at crude loading ports for ballast water reception from short voyage vessels and at nearly all ports for the reception of sludges and residues from both dry cargo ships and tankers.

2. Contingency plans

Ten States still do not have national contingency plans to deal with a pollution emergency. There are no bilateral or subregional agreements which can be considered operational between Mediterranean countries. Although there are some which could be transformed into a plan of common action in case of massive oil spillage, the following agreements between several countries are mostly for protection of the sea and do not involve operational anti-pollution fighting at sea or on shore:

- Bilateral Agreement between Italy and Yugoslavia and Co-operation towards protecting waters of the Adriatic and Coastal Areas from pollution (signed in Grado on 14.02.74);
- Trilateral Agreement between France, Italy and Monaco concerning the protection of Mediterranean waters (signed in Monaco on 10.03.76);
- Bilateral Co-operation Agreement between Greece and Italy on the protection of the Ionian Sea and Coastal Areas (signed in Rome on 06.03.79).

A fourth agreement, concerning operational intervention, has been signed in 1979 between France and Italy. Although this agreement, called MEDIPLAN, has not officially come into force, the Contracting Parties agreed that it should be applied on the basis of a voluntary agreement.

3. Prevention and Inspection

Only eight States in the Mediterranean Sea Area are Parties to MARPOL 73/78. Thus, nine States have not implemented its control and pollution prevention provisions which would allow inspection of ships and tankers entering ports in the area. There is a need to co-ordinate pollution prevention efforts and establish a surveillance system to track down offenders.

The role assigned to ROCC has been carried out to the extent that budgetary constraints allow and within the context of its terms of reference.

INTRODUCTION

The report which follows has been compiled at the request of the Co-ordinating Unit for the Mediterranean Action Plan as part of a series of documents being prepared for the purpose of assessing pollution of the Mediterranean by major pollutants monitored as part of the MED POL - PHASE II Programme. It reviews the current situation with regard to the assessment and control of pollution by petroleum hydrocarbons and highlights pollution from shipboard operations and the disposition of material therefrom. It also assesses the work of the Regional Oil Combating Centre in Malta and makes some recommendations which it is hoped will assist in promoting a pollution-free Mediterranean Sea.

Pollution of the sea by petroleum hydrocarbons does not entirely come from marine operations, in fact only slightly more than one-third of petroleum hydrocarbons which reach the sea emanate from maritime operations.

Table 1 shows the estimated quantities of petroleum hydrocarbons entering the oceans; quoted in the report of the National Academy of Sciences entitled "Petroleum in the Marine Environment" 1975 and the first draft of an update of that report prepared in 1982. From this it will be noted that the total of oil entering the oceans is estimated to have fallen by 45% in the period between the two reports and that oil originating from transportation was reduced by 33%.

These figures were arrived at prior to the entry into force of the International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 relating thereto (MARPOL 73/78), the implementation of which will result in a steady diminution in the amount of oil entering the sea as a result of tanker operations. It is probable that by the end of 1983 the global figure for oil entering the oceans as a result of maritime transportation had already fallen below the one million tonne level.

It is estimated that some 35% of ships engaged in the transportation of petroleum, loads, discharges or passes through the Mediterranean Sea. On this basis and taking the revised National Academy of Sciences figure of 1.44 millions tonnes shown in table 1 as the global figure for oil entering the oceans from ships, a figure of half a million tonnes of oil entering the Mediterranean Sea from that source would not appear unreasonable. However, with the advent of MARPOL 73/78 backed by suitable reception facilities, this figure should be dramatically reduced.

Other controllable sources of pollution of the sea are from land-based sources, from offshore oil production and from ocean dumping. Dealing specifically with the Mediterranean Sea, the Convention for the Protection of the Mediterranean Sea against Pollution (1976) covers abatement of pollution from ships in conformity with internationally accepted standards, and two of its related Protocols cover ocean dumping from ships and aircraft and pollution from land-based sources.

Certain of the Mediterranean coastal States are also Members of the European Economic Community or are Parties to such international treaties as the Paris Convention. Anti-pollution regulations and standards arising from such commitments are referred to in the following section.

Table 1. Comparison of petroleum hydrocarbons introduced into the oceans

	As per National Academy of Sciences Report - 1975	As per first draft of revised National Academy of Sciences Report - 1982
NATURAL SEEPS	0.600	0.20
SEDIMENT EROSION	-	0.05
OFFSHORE PRODUCTION	0.080	0.05
TRANSPORTATION		
Load-on-Top Tankers	0.310)	0.70
Non-Load-on-Top Tankers	0.770)	
Dry-docking	0.250	0.03
Terminal Operations	0.003	0.02
Bilges-Bunkering	0.500	0.30
Tanker accidents	0.200	0.40
Non-Tanker accidents	0.100	0.02
Transportation sub-total	2.133	1.44
COASTAL REFINERIES	0.200	0.20
ATMOSPHERE	0.600	0.30
COASTAL MUNICIPAL WASTES	0.300	0.70
COASTAL NON-REFINING		
INDUSTRIAL WASTES	0.300	0.20
URBAN RUN-OFF	0.300	0.03
RIVER RUN-OFF	1.600	0.10
OCEAN DUMPING	-	0.02
TOTAL	6.113	3.39

1. LEGAL STATUS OF THE MEDITERRANEAN SEA AREA

International Conventions in Force in Mediterranean Sea Area

1.1 Table 2 sets out the position of Mediterranean States (with the exception of Albania which is not a signatory to the Barcelona Convention) with regard to International Conventions relevant to pollution of the sea by petroleum hydrocarbons.

1.2 The table shows that for all the 17 Contracting Parties to the Convention for the Protection of the Mediterranean Sea against Pollution ("The Barcelona Convention"), the Convention has entered into force. By article 6 thereof they are obligated to:

"... take all measures in conformity with international law to prevent, abate and combat pollution of the Mediterranean Sea Area caused by discharges from ships and to ensure the effective implementation in that Area of the rules which are generally recognized at the International level relating to the control of this type of pollution".

1954 OILPOL with 1969 Amendments

1.3 All States for whom the Barcelona Convention has entered into force, with the exception of Turkey, are parties to the International Convention for Prevention of Pollution of the Sea by Oil 1954 (OILPOL), as amended in 1962 and 1969.

1.4 The relevant part of these latter amendments prohibits discharge from oil tankers into the sea of oil or oily mixtures within 50 miles of the nearest land. Beyond the 50 mile limit such discharge is restricted to an instantaneous rate of discharge of 60 litres per mile of oily residue whilst underway and limits the overall overboard discharge to one fifteen thousandth part of the cargo of which the residue formed a part.

1.5 Because of the geographical configuration of the Mediterranean Sea Area the 1969 amendments effectively prohibited the discharge of oil or oily mixtures in the Mediterranean Sea Area except for two small areas (one to the East and one to the West of Malta) where discharges at 60 litres per mile are permissible.

1.6 Compliance with this Convention is extremely difficult to monitor and relies, in the main, on good operating practices by the vessel and on inspection of the tanker's Oil Record Book by Maritime Authorities since obtaining a representative sample of the vessel's overboard discharge is virtually impossible.

1.7 With much of the oil produced in the Mediterranean Sea Area being discharged at ports within the area it is difficult, within the time available on the ballast voyage, to carry out the "Load-on-Top" procedure devised by industry which is necessary to comply with the 60 litres per mile and one fifteen thousandth criteria. The cost of delaying the vessel in order to carry out this process would result in a prohibitive increase in the freight charged. In the absence of shore reception facilities residues are, in some cases, discharged into the sea despite the OILPOL Convention being in force for the coastal States.

Table 2. Date of entry into force of conventions relevant to pollution of the sea

	Barcelona Convention 1976	MARPOL 73/78	OILPOL 54/69*	London Dumping Convention 1972	Civil Liability Convention 1969	Fund Convention 1971	Intervention Convention 1971	Intervention Protocol 1973
DATE OF ENTRY INTO FORCE	12 Feb. 1978	2 Oct. 1983	20 Jan. 1978*	30 Aug. 1975	19 June 1975	16 Oct. 1978	6 May 1975	30 March 1983
<u>COUNTRY</u>								
Algeria	16 Apr. 1984		20 Apr. 1964		19 June 1975	16 Oct. 1978		
Cyprus	19 Dec. 1979		10 Sep. 1980					
Egypt	23 Sep. 1978		22 July 1963					
France	10 Apr. 1978	2 Oct. 1983	26 July 1958	5 Mar. 1977	19 June 1975	16 Oct. 1978	6 May 1975	
Greece	2 Feb. 1979	2 Oct. 1983	28 June 1967	9 Sep. 1981	27 Sep. 1976			
Israel	2 Apr. 1978	2 Oct. 1983	11 Feb. 1966					
Italy	5 Mar. 1979	2 Oct. 1983	25 Aug. 1964	30 May 1984	28 May 1979	28 May 1979	28 May 1979	30 March 1983
Lebanon	12 Feb. 1978	2 Oct. 1983	31 Aug. 1967		19 June 1975		3 Sep. 1975	
Libya	3 Mar. 1979		18 May 1972	22 Dec. 1976				
Malta	12 Feb. 1978		10 Apr. 1975					
Monaco	12 Feb. 1978		25 June 1970	15 June 1977	19 Nov. 1975	21 Nov. 1979	6 May 1975	
Morocco	14 Feb. 1980		29 May 1978	20 Mar. 1977	19 June 1975		6 May 1975	
Spain	12 Feb. 1978	6 Oct. 1984	22 Apr. 1964	30 Aug. 1975	7 Mar. 1976	6 Jan. 1982	6 May 1975	
Syria	25 Jan. 1979		24 Mar. 1969		19 June 1975	16 Oct. 1978	6 May 1975	
Tunisia	12 Feb. 1978	2 Oct. 1983	11 Sep. 1973	13 May 1976	2 Aug. 1976	16 Oct. 1978	2 Aug. 1976	30 March 1983
Turkey	6 May 1981							
Yugoslavia	12 Feb. 1978	2 Oct. 1983	11 June 1974	25 July 1976	16 Sep. 1976	16 Oct. 1978	3 May 1976	30 March 1983

* Date of entry into force of 1969 Amendments.

1.8 Nevertheless, it should be noted that this is the only international convention on prevention of oil pollution to which virtually all Mediterranean States subscribe.

MARPOL 73/78

1.9 The International Convention for the Prevention of Pollution from Ships, 1972, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78) entered into force on 2 October 1983 and at that time seven Mediterranean States were parties thereto - one State, however (France) had made the following important declaration with regard to the provisions relating to the Mediterranean Special Area:

"As far as the Mediterranean Sea area only is concerned, the provisions of Regulation 10 (paragraph 2) of Annex I of the Convention can be applied to tankers engaged in voyages within the Mediterranean only if such tankers are proceeding to a port equipped with the reception facilities required by Regulation 12 of the Convention".

For an eighth State (Spain), the MARPOL 73/78 Convention entered into force on 6 October 1984.

1.10 It should be noted that the definition of oil or oily mixtures was extended by MARPOL 73/78 to include all hydrocarbon oils (both "black" and "white" oils) whereas OILPOL 54 with its amendments dealt only with "black" oils. "White" oils, being refined products of crude oil, are generally more volatile and therefore less persistent in the marine environment. However, since the aromatic content is higher their initial impact upon the environment may be greater.

1.11 MARPOL 73/78 lays down discharge criteria for all oil tankers of 150 gross tons and above. However, tables 3, 4 and 7 in this report, which have been prepared from industry data, cover only ships of 10,00 dwt (approx. 6,000 grt) and above. They are therefore not entirely complete but the inclusion of vessels between 150 grt and 10,000 dwt in the figures would not make any significant difference to the overall picture they present.

1.12 Table 3 shows that the eight Mediterranean States which are Contracting Parties to MARPOL 73/78 and to the Barcelona Convention between them have 449 tankers under their flags which represent 15.77% of the carrying capacity of the world fleet.

1.13 The nine other States which are Contracting Parties to the Barcelona Convention, but not to MARPOL 73/78, have 99 tankers under their flags representing 2.86% of the world fleet (table 4).

Definition of "Special Area"

1.14 By Regulation 10 of annex I of MARPOL 73/78 (which regulates pollution by oil and oily wastes) the Mediterranean Sea is declared a special area for the purpose of that annex. A special area is defined by Regulation 1(10) of that annex as:

"... a sea area where for recognized technical reasons in relation to its oceanographical and ecological condition and to the particular character of its traffic the adoption of special mandatory methods for the prevention of sea pollution by oil is required. Special areas shall include those listed in Regulation 10 of this annex".

Table 3. States for which MARPOL 73/78 has entered into force with number of tankers above 10,000 dwt and percentage of world fleet by carrying capacity at 31.12.83

State	No. of tankers over 10,000 dwt	Percentage of world fleet at 31.12.83
BARCELONA CONVENTION STATES		
France	58	3.67
Greece	254	7.46
Israel	-	-
Italy	76	2.18
Lebanon	1	-
Spain*	55	2.34
Tunisia	-	-
Yugoslavia	5	0.12
Sub-total Barcelona States	449	15.77
OTHER STATES		
Bahamas	21	1.24
Belgium	9	0.18
China	50	0.55
Colombia	1	0.01
Czechoslovakia*	-	-
Denmark	48	1.60
Finland	31	0.78
Gabon	1	0.05
German Democratic Republic	2	0.03
Federal Republic of Germany	26	1.24
Japan	193	9.30
Liberia	598	26.98
Netherlands and Neth. Antilles	33	1.00
Norway	147	6.67
Oman	-	-
Peru	7	0.09
Republic of Korea*	15	0.56
St. Vincent and Grenadines	-	-
Sweden	24	0.94
USSR	199	2.21
U.K.	175	5.39
Uruguay	2	0.06
U.S.A.	289	5.82
Sub-total other States	1,871	64.70
TOTAL	2,320	80.47
No. of tankers above 10,000 dwt	3,155	
% by vessels of MARPOL States	74.48	

* Entry into force October 1984

Table 4. Barcelona Convention States which have not ratified MARPOL 73/78 with number of tankers above 10,000 dwt and percentage of world fleet by carrying capacity at 31.12.83

State	No. of tankers over 10,000 dwt	Percentage of World Fleet at 31.12.83
Algeria	11	0.38
Cyprus	44	1.28
Egypt	5	0.05
Libya	13	0.52
Malta	-	-
Monaco	-	-
Morocco	7	0.08
Syria	-	-
Turkey	19	0.55
TOTAL	99	2.86

1.15 The Mediterranean Sea is defined in Regulation 10 as bounded in the West by the Straits of Gibraltar at the Meridian of 5°36'W and the boundary between the Mediterranean and the Black Sea is defined as the 41°N parallel. Regulation 10(2)(a) of the annex prohibits any discharge into the sea of oil or oily mixtures from any oil tanker or any ship of more than 400 grt whilst in a special area.

1.16 Regulation 10(2)(b) of the annex requires such ships whilst in the special area to retain on board all oil drainage and sludge, dirty ballast and tank washing waters and discharge them only to reception facilities. Regulation 10(4), however, permits the discharge of clean or segregated ballast. The definition of clean ballast is that it shall be from a tank which has been cleaned so that effluent discharged therefrom leaves no visible trace of oil on the water. Proof that the clean ballast contained less than 15 ppm of oil is a valid defence if visible traces of oil are seen.

Obligations of Mediterranean Coastal States Parties to MARPOL 73/78

1.17 By Regulation 10(7) of annex 1 each Contracting State to MARPOL 73/78 which borders on a special area undertakes to ensure that all oil loading terminals and repair ports under its jurisdiction are provided with facilities adequate for the reception and treatment of all the dirty ballast and tank washing waters from oil tankers. In addition, facilities for receiving other residues and oily mixtures from all ships must be provided. Contracting States to MARPOL 73/78 are required under Regulation 19(7)(iv) to advise IMO, for transmission to other Parties, of all cases where the required facilities are inadequate.

Obligations of Mediterranean Coastal States which are also members of the European Economic Community

1.18 Three States (France, Italy and Greece) which are Parties to the Barcelona Convention, 1976 are also Member States of the European Economic Community (EEC). The EEC is a Contracting Party to the Barcelona Convention by an instrument of Approval dated March 1978.

1.19 There are certain Directives of the Commission of the European Communities which cover pollution of the sea by oil, with which Member States must comply. Thus, for the three States which are Parties to both instruments, there are additional responsibilities over and above those for Barcelona Convention States.

1.20 Three of the Directives are relevant to pollution of the Mediterranean Sea area, two of which relate to transportation of oil by sea, whilst the third deals with the disposal of waste oils (particularly used lubricating oil) - Directive 75/439.

Those which refer to pollution from ships are:

1. "Decision of 3 December 1981 establishing a Community information system for the control and reduction of pollution caused by hydrocarbons discharged at sea", and
2. "Decision of 27 September 1983 on drawing up of contingency plans to combat accidental oil spills at sea".

Present position and future action

1.21 Since there are nine Barcelona Convention States which are not Contracting Parties to MARPOL 73/78 and there have been reports of inadequate facilities in the ports of some of the Contracting States, it must be assumed that not all the Mediterranean ports meet the reception facility requirements prescribed for special areas by MARPOL 73/78.

1.22 However, reference to the second section of table 3 shows that Nations responsible for over 80% of the carrying capacity of the world tanker fleet and 75% by number of tankers are Parties to MARPOL 73/78 which means that all those States accept that the Mediterranean Sea is a special area and that it is an offence under their national law for ships of their flag to fail to comply with the requirements of the Convention insofar as this is possible.

1.23 It could, therefore, be argued that acceptance of the provisions of MARPOL 73/78 by States which control so large a proportion of the world tanker fleet, makes the Regulations in Annex I "... the rules which are generally recognized at the International level relating to control of this type of pollution" referred to in Article 6 of the Barcelona Convention.

1.24 Thus, eight out of seventeen States which are Contracting Parties to both the Barcelona Convention 1976 and MARPOL 73/78 have a legal obligation under these two instruments to ensure effective implementation of the provisions of Annex I of MARPOL 73/78 in respect of the Mediterranean area which is recognized, for the purposes of this Annex, as a "special area". It could certainly be most beneficial for the region if the nine remaining States would also ratify MARPOL 73/78 although it seems clear that even without doing so those States are implicitly obliged (as well as the Contracting Parties to MARPOL 73/78) to implement Annex I by virtue of Article 6 of the Barcelona Convention which reads:

"The Contracting Parties shall take all the measures in conformity with international law to prevent, abate and combat pollution of the Mediterranean Sea area caused by discharges from ships and to ensure the effective implementation in that area of the rules which are generally recognized at the International level relating to the control of this type of pollution".

1.25 Ratification of the London Dumping Convention 1972 by the eight States which are Parties to the Barcelona Convention, 1976 but not to the London Dumping Convention is also important if they are fully to comply with their obligations under Article 5 of the Barcelona Convention to prevent pollution caused by dumping.

1.26 For those States which are not party to the three other Conventions governing pollution by oil shown in table 2, participation in these Conventions could only be of benefit. The International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969 (Intervention 1969) provides the basis for a State threatened by oil pollution from a ship to take any necessary action outside its territorial waters in order to protect its coasts and the International Convention on Civil Liability for oil Pollution Damage 1969, (CLC 1969) with the international Convention on the Establishment of an International Compensation Fund for Oil Pollution Damage, 1971 (IOPC FUND 1971) provide compensation for damage sustained by oil pollution from ships and for the costs of clean-up.

2. RECEPTION FACILITIES

Requirements of MARPOL 73/78

2.1 Reference has been made in the previous section to the obligation placed upon Contracting States to MARPOL 73/78 to provide reception facilities. Regulation 10(7) of Annex I deals with such facilities in special areas and the relevant section covering the Mediterranean Sea area States:

"The Government of each Party to the Convention, the coastlines of which borders any given special area, undertakes to ensure that not later than 1 January 1977 all oil loading terminals and repair ports within the special area are provided with facilities adequate for the reception and treatment of all the dirty ballast and tank washing water from oil tankers. In addition, all ports within the special area shall be provided with adequate reception facilities for other oily residues and oily mixtures from all ships. Such facilities shall have adequate capacity to meet the needs of the ships using them without causing undue delay".

2.2. Regulation 12 of the same annex defines in more detail the type of facilities required:

Regulation 12

Reception Facilities

(1) Subject to the provisions of Regulation 10 of this Annex, the Government of each Party undertakes to ensure the provision at oil loading terminals, repair ports, and in other ports in which ships have oily residues to discharge, of facilities for the reception of such residues and oily mixtures as remain from oil tankers and other ships adequate to meet the needs of the ships using them without causing undue delay to ships.

(2) Reception facilities in accordance with paragraph (1) of this Regulation shall be provided in:

- (a) all ports and terminals in which crude oil is loaded into oil tankers where such tankers have immediately prior to arrival completed a ballast voyage of not more than 72 hours or not more than 1,200 nautical miles;
- (b) all ports and terminals in which oil other than crude oil in bulk is loaded at an average quantity of more than 1,000 metric tons per day;
- (c) all ports which have ship repair yards or tank cleaning facilities;
- (d) all ports and terminals which handle ships provided with the sludge tank(s) required by Regulation 17 of this Annex;
- (e) all ports in respect of oily bilge waters and other residues, which cannot be discharged in accordance with Regulation 9 of this Annex; and,
- (f) all loading ports for bulk cargoes in respect of oil residues from combination carriers which cannot be discharged in accordance with Regulation of this Annex.

(3) The capacity for the reception facilities shall be as follows:

- (a) Crude oil loading terminals shall have sufficient reception facilities to receive oil and oily mixtures which cannot be discharged in accordance with the provisions of Regulation 9(1)(a) of this Annex from all oil tankers on voyages as described in paragraph (2)(a) of this Regulation.
- (b) Loading ports and terminals referred to in paragraph (2)(b) of this Regulation shall have sufficient reception facilities to receive oil and oily mixtures which cannot be discharged in accordance with the provisions of Regulation 9(1)(a) of this Annex from oil tankers which load oil other than crude oil in bulk.

- (c) All ports having ship repair yards or tank cleaning facilities shall have sufficient reception facilities to receive all residues and oily mixtures which remain on board for disposal from ships prior to entering such yards or facilities.
- (d) All facilities provided in ports and terminals under paragraph (2)(d) of this Regulation shall be sufficient to receive all residues retained according to Regulation 17 of this Annex from all ships that may reasonably be expected to call at such ports and terminals.
- (e) All facilities provided in ports and terminals under this Regulation shall be sufficient to receive oily bilge waters and other residues which cannot be discharged in accordance with Regulation 9 of this Annex.
- (f) The facilities provided in loading ports for bulk cargoes shall take into account the special problems of combination carriers as appropriate.

(4) The reception facilities prescribed in paragraphs (2) and (3) of this Regulation shall be made available no later than one year from the date of entry into force of the present Convention or by 1 January 1977, whichever occurs later.

(5) Each Party shall notify the Organization for transmission to the Parties concerned of all cases where the facilities provided under this Regulation are alleged to be inadequate.

2.3 The cost of providing appropriate reception and treatment facilities as required by MARPOL 73/78 has been cited as one of the major reasons for the failure of a number of States to become Parties to the Convention.

2.4 States which are Parties to MARPOL 73/78 however, frequently draw attention to the impossible situation in which vessels of their flag are placed when they are ordered to proceed to a loading port (often at very short notice) in a State which is not Party to MARPOL 73/78 or does not have facilities are required by that Convention.

2.5 In such circumstances, if the loading port in question is in a Special Area they may find it extremely difficult to comply with the provisions of Regulation 10(2)(b) which prohibits discharge to the sea of oily mixtures and requires all oil drainage and sludge, dirty ballast and tank washing waters to be discharged only to reception facilities. Faced with such a situation the Master, owner and/or charterer of the vessel will be faced with a dilemma as to how to meet the Convention requirements and may well be tempted to discharge any dirty ballast or residue to the sea.

Deficiencies in Reception and Treatment Facilities in Mediterranean Sea area

2.6 Since MARPOL 73/78 was adopted there have been two major studies undertaken to review the situation regarding reception facilities in the Mediterranean Sea area. The first of these was carried out by a team of experts in response to a recommendation of IMO's Marine Environment Protection Committee and with financial support provided by UNEP (IMCO/UNEP Project FP/0503-78-01(1372)).

2.7 The team of experts were:

Capt. G. Steinman, USCG (Retired)

M. G.P. Guerin - Port Autonome de Marseille

M. J.P. Longe - " " " "

M. C.L. Montfort - " " " "

which produced the "Report on a Feasibility Study on Reception Facilities for Selected Ports in a Special Area - Mediterranean" - September 1979. The second study was carried out by the SNAM PROGETTI Organization of Italy under a joint Italy/European Economic Community project entitled "Feasibility Study on Deballasting Facilities in the Mediterranean Sea" - February 1983.

2.8 Table 5 gives a summary of the cost of implementing the recommendations of the two studies both of which were based upon treating facilities which would be capable of producing an effluent containing no more than 10 ppm oil.

2.9 The major cost differences in the two reports for the States of Italy and Syria result from the inclusion in the figures of provision for "grass roots" facilities in the Italy/EEC report rather than additions to existing facilities at nearby locations in the IMO/UNEP Study.

2.10 Amounts of the magnitude shown in table 5 are likely to be a deterrent to the full implementation of MARPOL 73/78 by States faced with major expenditure on such facilities.

2.11 These figures, however, represent the cost of installation of reception facilities as perceived at the time the reports were prepared and therefore represent the maximum requirement since they take no account of the developments which have subsequently occurred and which are outlined in the following paragraphs. Further, visits by IMO experts to certain of the States on missions of a more general nature, and under the IMO/UNDP Project RAB/79/015 - "Advisory Services with regard to port reception facilities in the Mediterranean Sea area", have led to suggestions which could provide workable reception facilities at costs somewhat less than those shown in the table. This would indicate that the cost of providing appropriate reception and treatment facilities to meet present conditions need not be a major obstacle to bringing into force the requirements of MARPOL 73/78.

Table 5. Estimated cost for oil reception and treating facilities

Country	Steinman Report - Sept. 79	SNAM Progetti Feb. 83
	US \$	US \$
Algeria	8,100,000	Not reported
Cyprus	450,000	880,000
Egypt	840,000	2,740,000
France	2,650,000	1,550,000
Greece	2,150,000	6,150,000
Israel	1,100,000	550,000
Italy	4,500,000	47,400,000
Lebanon	Not reported	35,530,000
Libya	102,150,000	Not reported
Malta	3,700,000	Not reported
Monaco	Not reported	Not reported
Morocco	300,000	1,220,000
Spain	2,000,000	1,350,000
Syria	13,950,000	33,950,000
Tunisia	1,400,000	Not reported
Turkey	1,680,000	1,300,000
Yugoslavia	5,650,000	Not reported
TOTAL	150,620,000	132,620,000
No. of Countries	(15)	(11)
Design Effluent Standard	10 ppm	10 ppm

Development which may affect the volume of reception facilities required to meet present and future requirements

Segregated Ballast Tankers

2.12 Although MARPOL 73/78 did not enter into force until October 1983 virtually all new tankers above 70,000 dwt ordered between 1975 and 1979 have been constructed with segregated ballast capacity in accordance with Regulation 13 of Annex I to MARPOL 73. Tankers ordered since June 1979, if they are crude oil carriers in excess of 20,000 dwt or product carriers in excess of 30,000 dwt, must be built with segregated ballast which must also be protectively located.

2.13 Thus, increasingly, the world tanker fleet will be equipped to carry ballast water which will not require shore facilities for its disposal. However, such ships may occasionally need to carry extra ballast in their cargo tanks during stormy weather conditions and in special areas such ballast would require to be discharged to reception facilities.

Clean Ballast Tankers

2.14 Until October 1985, existing crude oil tankers of 70,000 dwt and above may use a clean ballast system whereby certain tanks are used solely for ballast but this will be discharged through the vessel's cargo system. Until October 1987, existing crude oil tankers between 40,000 and 70,000 dwt may also use this system. After these dates the vessels must either fit a full segregated ballast system or install a crude oil washing system.

2.15 Tankers operating in the clean ballast mode in accordance with laid down procedures should not need to use shore reception facilities unless, due to bad weather, they have carried extra ballast in their cargo section.

Crude Oil Washing

2.16 From the entry into force of MARPOL 73/78 all existing crude oil carriers of 30,000 dwt and above which are not segregated or clean ballast ships, must be capable of carrying out crude oil washing during discharge of cargo in accordance with the regulations covering this operation. However, effluent from crude oil washed tanks which are ballasted prior to departure from the oil discharge port ("departure ballast") is not clean ballast and must be subject to load-on-top decanting procedure before discharging in accordance with Regulation 9 of MARPOL 73/78, Annex I. COW tankers operating entirely within a special area would be required to discharge departure ballast to reception facilities.

Tankers for which reception facilities will be required

2.17 Existing tankers below 40,000 dwt and new tankers below 20,000 dwt are not required to operate with any of the above mentioned systems but will still need to operate the retention on board system previously referred to as "Load-on-Top". Vessels which carry fuel oil cargoes are unable to crude oil wash and on the ballast voyage following discharge may need to discharge the tank washing slops to shore facilities prior to loading the next cargo. Combination carriers switching trades to dry bulk may also need to discharge the oil slops from their previous cargo to reception facilities. Ships operating in short haul trades (less than 72 hours) which are unable to practice "Load-on-Top" efficiently will, if below the minimum tonnages referred to above, need to discharge their dirty ballast ashore.

2.18 To cater for these vessels it is imperative that loading ports provide reception and treatment facilities sufficient to meet the needs of the number of vessels likely to require this service without causing undue delays.

Size of Tankers and Volume of Oil Movements

2.19 In assessing the volume of reception facility tankage likely to be required, it is essential to conduct a detailed study of current and future trade using the port. Volumes of oil to be exported, the size and frequency of loading, the amount of short-haul movements which may require special facilities need to be considered and attention also needs to be directed to general trends in global oil movements. Table 6 shows that world oil demand peaked in 1979, since then it has fallen by more than ten per cent. Of more immediate relevance is the reduction in the import of oil by sea which shows that from their 1979 peak, total oil imports have declined by over 30% and movements of crude oil alone were down by 37.5% between 1979 and 1983.

2.20 Another relevant factor is the average size of tankers comprising the world fleet and the average size of new buildings. Since 1979, when the average tanker was almost 100,000 tons dwt, this had dropped to 91,000 dwt by the end of 1983. The reduction in average size is more significant when referring to the note on table 7 which shows that the average size of operating tankers (i.e. excluding lay-up) has dropped to 81,000 dwt - a reduction of almost 20% in five years.

2.21 A review of the new buildings on order shows that since the end of 1977 the average size of new buildings has gone down by no less than 50%.

Environmental and Economic Factors

2.22 Since MARPOL 73/78 was adopted there has been an ever-increasing global awareness of environmental matters and of the need to bring the expectations of those who developed its provisions to fruition by enforcing its more stringent standards. This increasing awareness of environmental needs was demonstrated by the adoption of the 178 Protocol which was added before the 1973 Convention had entered into force and which strengthened still further the standards required.

Table 6

WORLD OIL CONSUMPTION			
Year	Million Tonnes		
1977	2972.4		
1978	3075.9		
1979	3119.6		
1980	3001.4		
1981	2901.7		
1982	2818.8		
1983	2794.0		
IMPORTS AND EXPORTS OF CRUDE OIL AND PRODUCTS			
Year	Crude Oil	Products	Total (Million Tonnes)
1977	1458.6	265.4	1724.0
1978	1429.8	251.3	1681.1
1979	1494.7	256.9	1751.6
1980	1317.5	270.7	1588.2
1981	1164.4	258.7	1423.1
1982	998.4	271.4	1269.8
1983	935.9	270.2	1206.1

Table 7. World tanker fleet over 10,000 dwt

Year	Average size of existing tankers at 31 December	Average size on order at 31 December
1977	94,984	104,278
1978	98,384	96,315
1979	99,876	60,990
1980	97,350	51,700
1981	95,051	45,256
1982	93,049	47,055
1983	91,006 (a)	50,463

(a) At 31 December 1983 the breakdown between operating and laid-up tankers was:

	No. of Vessels	Average dwt
Operating tankers	2,693	80,950
Laid-up tankers	296	182,770
TOTAL	2,989	91,006

2.23 Coincident with this movement was the rapid increase in oil prices which provided a major incentive to oil cargo owners to reduce, as far as practicable, losses in the transportation of oil. Thus, it became economic to install crude oil washing and inert gas systems which dramatically reduced losses in transit and which also benefited the environment. This has meant that oil and oily mixtures which were once discharged to the sea or to reception facilities are now discharged as cargo. This trend will receive further impetus as the new segregated ballast ships enter the fleet since their advent will increase freight costs and therefore the landed value of oil.

2.24 As each year passes the economics of building new reception and treatment facilities for tanker ballast water become more uncertain due to many of the preceding factors. In a world where there is competition for available resources it is not surprising that some nations are reluctant to commit their limited resources to such projects. Nevertheless, it is of vital importance to the marine environment in general, and to special areas in particular, that sufficient facilities are provided to meet the continuing needs of a limited number of vessels. The urgency of providing such facilities cannot be overstressed.

Sludge and Bilge Collection Facilities

2.25 By far the most important aspect of the provision of reception and treating facilities to prevent oil or oily mixtures being dumped at sea, is the problem of the collection of sludge and bilge residues from all vessels both tanker and dry cargo. Reference to table 1 indicates that this is currently the second largest source of oil entering the sea from ships, and may well become the most significant as the requirements of MARPOL 73/78 are implemented by tankers.

2.26 The advent of higher bunker prices has caused a major change in the propulsion systems of the world merchant fleet. There has been a rapid increase in the use of diesel engines and most now burn heavy fuel oil. To enable the engines to operate efficiently it is necessary to centrifuge the oil in an oil purifier before combustion. This process produces sludges which cannot easily be burned and is therefore kept in a sludge tank on board the ship until it can be pumped to a reception facility either afloat or ashore. Since such facilities are often not available it is not unknown for this material to be discharged overboard when the holding tank is full. The volume of material for which a ship needs a receiving vehicle at any one time, is not very large and one logical method of disposing of it is to a small craft which can come alongside and collect the material whilst other operations are taking place. The receiving small ship or barge can then make collections from other ships before discharging its load to a treatment facility.

3. DISPOSAL PROBLEMS WITH MATERIAL RECEIVED

3.1 Disposal of material received and treated by shore reception facilities can be a simple and economic proposition or a major technical problem according to the properties of the material received.

3.2 Mixtures of water and light crudes typical of much of Middle East production (API 36" and above) will separate quite easily by gravity, permitting much of the water to be pumped out with negligible oil content. The recovered oil can be burned as a fuel or may be mixed with fresh crude oil which is being loaded. There may, however, remain a quantity of oil/water emulsion which requires further treatment with emulsion breakers and filtration through secondary or even tertiary treatment facilities before the separated water can be discharged to the sea and the recovered oil utilised commercially.

3.3 Mixtures of water and heavier crude oils or those with a high wax content have a greater tendency to form emulsions and will normally require secondary and sometimes tertiary treatment before the water can be discharged.

3.4 The whole question of water discharge from reception facilities on shore requires careful consideration. Not only are part per million of the effluent extremely important but the total amount of oil being discharged over a given period should also be calculated and its potential to cause damage assessed. Chronic pollution, even though at a low level, can be more damaging to the immediate environment than an accidental spill. The environment will usually recover quite quickly from an accidental spill but may well be extremely slow to recover from ecological damage caused by continuous low-level discharges.

3.5 The problems of disposal of sludges from diesel vessel centrifuges and residues from bilges and from cleaning bunker tanks are much greater than those of the disposal of washings from oil tanker cargo tanks. Much of this material is not easily combustible - and if burning is possible it may create air pollution unless carried out in special equipment under carefully controlled conditions. Some of the methods for disposal of this sludge which have been adopted are by use as land fill and as a binder for dirt roads in remote locations.

3.6 Disposal of oily materials containing weathered oil and debris also pose major problems for States. In addition to oil which is recoverable following treatment, emulsions known as "chocolate mousse" are formed and much of the oily mixture will be contaminated with debris and flotsam. "Chocolate mousse" will not burn and is best used as land fill where it will ultimately degrade. Under some circumstances contaminated oil and debris may be disposed of by burning under controlled conditions. In this regard attention is drawn to two reports by CONCAWE on "Sludge Farming: a technique for the disposal of oily wastes" and "Disposal techniques for spilt oil" (see annex I, items 28 and 29).

4. ACCIDENT STATISTICS

Oil Spills in the Mediterranean Sea Area

4.1 Table 8 gives figures, provided by the International Tanker Owners Pollution Federation Ltd. from their extensive records, of spills of oil into the Mediterranean Sea Area.

4.2 These cover the ten year period up to the end of 1983 and show a most encouraging trend. There has been a noticeable and virtually continuous downward movement in the overall total number of spills recorded and, in particular, in the number of larger spills - only one spill over 5,000 barrels being recorded since the end of 1980. The ITOPF statistics include only those from identified sources and do not cover unidentified spills.

4.3 Since its establishment, the Regional Oil Combating Centre in Malta has kept a careful record of spills which have been reported to it and a summary of these is shown as table 9.

4.4 Of 89 spills reported to ROCC in the period to 31 December 1983, the source of 30 were not identified leaving a total of 59 identified spills reported.

4.5 Compared to the total spills each year reported by ITOPF it is noticeable that comparatively few were reported by States to ROCC in the early stages of its existence although the position appears to be improving. In 1983 ITOPF reported 15 spills whereas ROCC received 11 reports of identified spills or 73% of the ITOPF figures. In previous years the ROCC figures had never exceeded 50% of those recorded by ITOPF.

Table 8. Oil spills in the Mediterranean area, 1974-1983, reported by the International Tanker Owners Pollution Federation Ltd.

Year	Amount (Barrels)				Total
	up to 50	50 - 5000	5000 +	unknown	
1974	57	6	2	47	112
1975	51	7	-	76	134
1976	43	3	3	39	88
1977	26	4	3	52	85
1978	24	3	1	37	65
1979	22	5	4	52	82
1980	11	4	2	48	65
1981	17	-	-	41	58
1982	8	1	-	15	24
1983	6	2	1	6	15
TOTAL	265	35	15	413	728

Note: The figures above are based on reports received of oil spills from tankers affecting the coasts, islands and waters of Algeria, Cyprus, Gibraltar, Greece, Israel, Italy, Lebanon, Libya, Malta, Morocco, Syria, Tunisia, Yugoslavia and the Mediterranean coasts, islands and waters of Egypt, France, Spain and Turkey.

Role of the Regional Oil Combating Centre (ROCC) in Emergencies

4.6 ROCC has carefully monitored all the major maritime accidents which have occurred in the area since it was established at the end of 1976 and has acted as a communication centre as requested. On five occasions it has been requested to provide expert help to States in the area faced with an emergency and on each occasion it has been able to respond positively by finding the appropriate expert (through IMO) or by the attendance of ROCC personnel.

4.7 It is of interest that the technical expertise accumulated by ROCC in responding to spillages has resulted in requests for assistance from outside the Mediterranean region.

4.8 In 1983 the Centre was asked for technical assistance through UNEP by the Marine Emergency Mutual Aid Centre (MEMAC) in Bahrain (Note - MEMAC was largely modelled on ROCC) which is a component Organization of the Kuwait Action Plan. This request for assistance, complied with by the Centre's Technical Consultant, was able to assist MEMAC at the time of the initial problems experienced in that area following the damage to oil wells in the NAWRUZ oil field.

Table 9. Spills reported to Regional Oil Combating Centre, Malta

Year	Total spills reported	Cause of identified spills			Un-identified spills	No Spillage Tonnes Reported	Size of Spill			Dispersants used	Remarks
		Collision	Wreck or grounding	Fire and/or Explosion			Other	Under 1,000 Tonnes	1,000 to 5,000 Tonnes		
1977 (July/Dec)	6	1	-	-	3(a)	2	1	2	-	4	(a) Two accident discharges during pumping one tank overflow
1978	11	1	5	1	3	2	-	-	-	2	(b) Wrong manoeuvres in terminal
1979	10	5	2	-	-	4	2	2	1	5	
1980	12	3	2	2	1	7	3	-	2	4	
1981	22	1	3	6	4(c)	16	5	-	1	-	(c) Two pipeline ruptures, two leakages while discharging
1982	11	-	4	4	-	10	1	-	-	2	
1983	13	3	3	2	2(d)	14	3	-	-	1	(d) One pipeline rupture, one technical failure
TOTAL	89	14	19	15	11	62	17	2	4	4	

5. ROLE OF ROCC IN REGIONAL CO-OPERATION

Establishment of ROCC

5.1 The Regional Oil Combating Centre on Manoel Island, Malta was established by Resolution 7 of the Conference of Plenipotentiaries of the Coastal States of the Mediterranean Region on the Protection of the Mediterranean Sea (Barcelona, 1976) and was inaugurated in December of that year.

5.2 The basic objective of the Centre is to facilitate co-operation among Mediterranean coastal States in case of massive oil pollution and to assist them in developing their own anti-pollution capability. The centre has no operational role in combating oil pollution nor does it have any anti-pollution equipment.

5.3 Its role is currently limited to the combating of oil pollution and it has therefore had to concentrate its efforts on facilitating information exchange, encouraging and providing training, assisting States with their contingency planning when so requested and providing help and co-ordination in times of emergency (to which reference is made in Section 4).

Relationship with UNEP and IMO

5.4 Resolution 7 referred to above requested the Executive Director of UNEP, after consultation with the Government of Malta and the Secretary-General of IMO, to assist in the establishment of the Centre. The Governing Council of UNEP was also requested to defray the expenses of establishing the Centre and its initial operating expenses under the assumption that the operating expenses would subsequently be funded by contracting States to the Convention. UNEP was requested to provide secretariat services to the Barcelona Convention and to act as overall co-ordinator for the Mediterranean Action Plan as part of its Regional Seas Programme.

5.5 As was envisaged by Resolution 7, UNEP initially provided funds to establish and operate the Centre but funding has now been assumed by the Contracting States with the secretariat functions and co-ordination of the Action Plan being undertaken by the Co-ordinating Unit for the Mediterranean Action Plan which is based in Athens.

5.6 IMO is entrusted with the responsibility for the establishment and operation of the Centre. It provides administrative and technical support and ensures the technical competence of the staff as well as providing back-up by experts for the implementation of its work programmes.

5.7 The budget for the Centre and decisions as to programme content are decided at periodic meetings of the Contracting Parties which review the overall operation of the Mediterranean Action Plan. Thus the Centre finds itself in competition for funds to implement programmes it believes to be important, with other elements of the Action Plan

Limitations on the role of ROCC

5.8 As stated earlier, the role of ROCC is restricted to combating massive pollution by oil, especially in cases of emergency. At some future date Contracting Parties to the Barcelona Convention may extend the scope of ROCC to deal with spillages of hazardous substances other than oil.

5.9 ROCC could make an increasingly significant contribution to the control of pollution in the Mediterranean region if greater demands were made upon it by the Coastal States, for example in the development of national, bilateral and multilateral contingency plans.

Enhancement of the role of ROCC

5.10 Areas within its existing mandate in which the Centre could benefit participating States are:

(a) Review of major incidents

Much can be gained by States with little or no experience of major pollution incidents by learning from the experience of those who have had to deal with such an emergency. Any effective national contingency plan should require a review of each occasion when the plan has been implemented in order to see what improvements can be incorporated. ROCC should be invited to convene periodic meetings at which such reviews, if made available to it, could be studied and discussed by representatives from all States in the area whenever incidents produce circumstances which will add to the general body of knowledge on pollution response.

(b) Census of training needs and trained personnel

In order for ROCC to be able to carry out its training responsibilities efficiently, it needs to undertake a study, in collaboration with the focal point in each State, which should establish:

- The number of people required to handle the emergency envisaged by the national Contingency Plan;
- The degree of special knowledge required by each group of people in the plan;
- The number of people in each group who have the required knowledge and experience;
- The number of people requiring to be trained with the type of knowledge each group requires.

5.11 With such information and the co-operation of the States ROCC should be able to co-ordinate a long-term training programme at appropriate levels (and in suitable languages) to produce the necessary trained personnel to man the national contingency plans at minimum cost. It is recognized that there would also have to be a long-term financial commitment on the part of coastal States.

5.12 The terms of reference given by the Governments to ROCC do not include "Prevention" and "Co-ordination of Compliance with MARPOL 73/78". There would, however, appear to be some potential for ROCC to become involved in some training requirements associated with MARPOL 73/78 if Mediterranean Governments so agree.

6. CONTINGENCY PLANNING IN THE MEDITERRANEAN SEA AREA

The need for National Contingency Plans and mutual assistance arrangements

6.1 Whilst it is to be hoped that wider implementation of international agreements on safety and anti-pollution standards will result in a reduction in incidents which cause oil pollution, it is certain that there will continue to be some maritime accidents involving oil tankers and offshore platforms which could result in the large scale release of oil. Such accidents, even though comparatively rare, do not respect national frontiers; therefore it is also desirable for neighbouring States to enter into bilateral or multilateral agreements covering the basis of organization to be adopted in the event that more than one State is involved. States should also enter into mutual assistance arrangements on a regional basis to facilitate the loan of personnel and equipment in incidents which escalate to a point which is beyond the capability of a single State.

6.2 The need for this latter type of arrangement was recognized by the Barcelona Convention which added a Protocol Concerning Co-operation in Combating Pollution of the Mediterranean Sea by Oil and Other Harmful Substances in Cases of Emergency to which all 17 Barcelona Convention States are Party.

6.3 Bilateral, multilateral and regional arrangements are an essential part of the successful response to a major pollution incident. They are, however, only a back-up to the national contingency plan which is imperative for each State to maintain in an up-to-date operational condition by regular exercises and call-out checks.

Mediterranean States with operational and tested plans

6.4 Mediterranean States known to have operational national plans are:

France
Greece
Israel
Italy
Monaco
Spain
Turkey

An analysis of the plans of each country is to be found in the country by country review which follows later in this section.

Mediterranean States in process of developing national contingency plans

6.5 At the present time six States are reported to be in process of preparing and implementing national contingency plans. The present state of each plan is set down in the country by country review which follows. The six States are:

Algeria
Cyprus
Malta
Morocco
Tunisia
Yugoslavia

States which have not reported preparation of national contingency plans

6.6 Four States have, so far, not reported preparation of a national plan. They are:

Egypt
Lebanon
Libya
Syria

Review of each State's state of readiness to respond to major pollution incident

6.7 Table 10 summarizes the state of readiness of the Mediterranean Sea area. A more detailed review of each State which is based on information provided to ROCC by its national focal points is as follows:

(a) Algeria

At present Algeria has no national plan or organization to respond to a national emergency. Since 1977 there have been three pollution alerts, only one of which resulted in a major incident. This occurred in 1980 when the JUAN A LAVALLEJA was seriously damaged in a freak storm after breaking out of its moorings. Algeria called on ROCC for assistance in handling this incident and subsequently IMO's Inter-Regional Consultant on Marine Pollution, Cdr. T.M. Hayes, was despatched to the scene where he rendered first-hand advice on means to deal with the resultant pollution.

Whilst oil interests have limited facilities for handling small local spills at oil loading ports, much remains to be done in the planning sphere, in the development of trained teams to handle a national emergency and in making the detailed arrangements to procure the essential basic equipment required to meet the initial response to an emergency. Discussions should also be instituted with neighbouring States on mutual assistance arrangements, risk assessment and scope of sub-regional or bilateral response capability.

(b) Cyprus

Although it is not yet finalized, the national plan has been prepared in draft, following assistance from ROCC who provided an expert to undertake the necessary draft.

A start has been made on training the necessary personnel to operate the plan by the holding of a national basic training seminar for 44 people which was mounted by IMO/ROCC. In addition, nine other people have received training at overseas courses as a result of fellowships made available by ROCC.

Limited equipment is available for dealing with an incident. This comprises a small length of boom, some skimmers and dispersant spraying units. There have been two pollution alerts, one in 1977 and one in 1980. On neither occasion was there significant pollution which would have called for the implementation of a national plan, although the ZENOBIA incident in 1980 was potentially a major pollution casualty. A request for assistance in this case was received by ROCC which responded by sending one of its technical staff to advise on action to be taken.

(c) Egypt

At the moment Egypt has no national contingency plan, although equipment for combating oil spillages arising during tanker loading operations is held by the operators of the SUMED Pipeline Terminal at Sidi Kerir and oil spill combating equipment is maintained by the Suez Canal Authority in the event of a spill occurring within the Canal limits. However, following the 1983 Workshop on Contingency Planning organized by ROCC, it has been indicated that ROCC will be requested to assist in the preparation of a national plan.

Action is being taken to train the necessary personnel to implement the plan. To date 22 people have been sent to overseas training courses through ROCC and a ROCC national seminar on basic training has taken place from 15-20 September 1984.

Whilst there is limited equipment to handle in-port spills on the Mediterranean seaboard, considerable further equipment is needed to permit an effective rapid response to a major incident.

Since 1977 there have been only two pollution alerts on the Mediterranean coast, neither of which has resulted in serious pollution.

(d) France

There is a well tried and tested national plan which is regularly exercised, in force for the Mediterranean coasts as part of the overall French national contingency plan.

There are two fully trained permanent teams to deal with pollution emergencies based in Toulon and Marseille and these have available a full range of surface and aircraft capable of dealing with spills at sea and a variety of land-based equipment to deal with shore clean-up. This equipment is mainly concentrated at Toulon and Marseille but some equipment (booms and dispersant spraying units) are located in Corsica. In addition, the oil industry also has personnel and equipment available at its ports and installations.

Whilst France is Party to multilateral arrangements for mutual assistance on its northern coasts, it does not have similar arrangements with its Mediterranean neighbours. There is a trilateral agreement with Italy and Monaco concerning the protection of Mediterranean waters (which was signed in Monaco on 10 March 1976) but this does not cover mutual assistance in case of marine emergencies.

There have been two pollution alerts since 1977, neither of which has resulted in serious pollution.

(e) Greece

Greece has a well tried and tested national contingency plan in operation, together with equipment and personnel to handle an emergency.

There has been one incident in which it has requested outside assistance through ROCC. This was in February 1980 when the IRENES SERENADE caught fire in the harbour of Pylos. ROCC was able to send one of its technical staff and the insurers called in the expert advice of the International Tanker Owners Pollution Federation Ltd. (ITOPF).

Since 1977 there have been 11 pollution alerts. Of these only two have resulted in pollution in excess of 5,000 tonnes, one of which was the IRENES SERENADE.

(f) Italy

There is a long-standing contingency plan in effect in Italy with a well trained group of personnel to operate it. Training programmes have been organised at Urbino to which other States were invited to send trainees and ROCC has arranged fellowships for personnel from other States to attend.

A full range of equipment is available for responding to emergencies both from national and commercial sources.

Since 1977 there have been 14 pollution alerts but fortunately none has resulted in a major emergency.

Italy has a bilateral agreement with Yugoslavia for co-operation on protecting the Adriatic Sea and its shores from pollution (signed in Grada on 14 February 1974) and one with Greece for the protection of the Ionian Sea and its coasts (signed in Rome on 6 March 1979). It is also Party to the trilateral agreement with France and Monaco concerning protection of Mediterranean waters (signed in Monaco on 10 March 1976). None of these agreements, however, cover anti-pollution response arrangements or mutual aid in times of emergency.

(g) Israel

Israel has a national plan and trained personnel to staff it. It has equipment available to make an initial response to an emergency. Since 1977 there has been only one pollution alert but this did not result in serious pollution.

(h) Libya

Libya has no national contingency plan and has not reported plans to prepare one. It has sent eight persons to overseas training courses through the co-operation of ROCC and there are a number of experienced staff in the oil exporting companies who can deal with limited pollution incidents at loading ports.

These companies also have a range of anti-pollution equipment comprising booms, skimmers, spraying vessels, dispersants, sorbents and flexible tanks.

Since 1977 only one pollution alert has been recorded which did not result in serious pollution

(i) Lebanon

There is no national contingency plan in operation. However, during the 1983 ROCC Workshop on Contingency Planning the Lebanese representative expressed his Government's intention to request the assistance of ROCC in the preparation of a national plan.

Only two persons have been trained at overseas locations under the auspices of ROCC and there are no reports of whether anti-pollution equipment is available.

Since 1977 only one minor oil spill alert has been recorded and this did not result in pollution.

(j) Malta

A draft national contingency plan is awaiting adoption.

Six Maltese have received training at overseas courses with assistance provided by ROCC.

There is very little equipment to respond to a major pollution incident, there being only a small amount of boom and some spraying equipment available.

There have been two pollution alerts since 1977. Fortunately neither caused serious pollution.

(k) Monaco

Monaco's contingency plan has been in existence for many years and it has adequate personnel and equipment to make an immediate response to a pollution incident.

Since 1977, however, there have been no pollution alerts involving the Principality. Monaco is Party to the trilateral agreement with France and Italy concerning protection of Mediterranean waters but this does not cover mutual assistance in the event of a major pollution incident involving the shore of more than one of the three States.

(l) Morocco

There is no national plan in operation. Assistance was provided by ROCC in 1981 and further assistance in drafting the plan has been offered.

Sixteen persons have attended overseas training courses through arrangements with ROCC but as far as is known there is no anti-pollution equipment available.

There has been one pollution alert since 1977. This occurred in 1982 on Morocco's Atlantic Coast but a request for expert assistance was immediately responded to by ROCC with the full support of IMO. A ROCC technical expert was despatched to the scene to assist in the co-ordination of response and as a result of action taken the threat of pollution was averted.

(m) Spain

The Spanish national contingency plan is now in operation but has, so far, not been called upon to deal with any emergency.

Thirteen persons have been sent to overseas training courses through the aegis of ROCC.

Oil companies have personnel and equipment at refineries and discharge terminals capable of dealing with in-port spills but there are no reports of other equipment being available.

As stated above, there have been no pollution alerts since 1977.

(n) Syria

Although there is no national plan in operation, ROCC has been requested to provide assistance in its preparation which is planned for the near future. Nine persons have received overseas training as a result of ROCC assistance.

Anti-pollution equipment available is extremely limited, comprising a small length of booms and some spraying equipment.

There has been one pollution alert since 1977 but there was no pollution.

(o) Tunisia

A draft national contingency plan was prepared by ROCC experts in 1978. During the 1983 ROCC Workshop on Contingency Planning the Tunisian representative requested further ROCC assistance in completing the plan and in bringing it into operation.

Seventeen persons have received overseas training as a result of ROCC efforts.

There are no reports of whether there is any anti-pollution equipment available in the event of a major emergency.

There have been five pollution alerts since 1977. One was the PARNASSOS in 1978 when ROCC was asked to assist. ROCC in turn requested IMO to provide help and they were able to arrange for two experts to deal with lightening and salvage of the vessel as a result of which pollution, was avoided. The other four alerts did not result in any pollution.

(p) Turkey

Turkey has a contingency plan in operation which it envisages reviewing and updating in the immediate future.

Nine persons have received training overseas as a result of ROCC assistance.

There are no reports of the type and amount of anti-pollution equipment available.

There have been five pollution alerts since 1977. Of these, four resulted in no significant pollution. However, in 1979 the INDEPENDENTA incident in the Bosphorus was a major pollution and fire hazard. ROCC was requested to assist and sent their technical expert to the scene. The vessel's insurers called in the team from ITOFF.

(q) Yugoslavia

The national contingency plan is currently under preparation. In addition to personnel trained locally, 12 have attended overseas courses under the auspices of ROCC.

A full range of anti-pollution equipment is available from local companies and port authorities. Arrangements for its co-ordinated deployment in time of emergency will need to be dealt with in the national contingency plan.

There has been one pollution alert since 1977 but this did not result in any pollution.

7. TRAINING

Training needs

7.1 For a Mediterranean State to be able to carry out its obligations under the Barcelona Convention and other international Conventions which deal with pollution of the sea (such as MARPOL 73/78), it requires an adequate number of skilled and trained personnel who will be capable of ensuring that Convention standards are complied with.

7.2 The training required to enable a State to be satisfied that it is meeting its treaty obligations, needs to be adequate to produce and maintain the following:

- (a) an inspectorate which can carry out the survey and certification of vessels of the flag of the State required in order that the International Oil Pollution Prevention (IOPP) Certificate can be issued to such vessels and revalidated as required;
- (b) an enforcement inspectorate which can visit vessels entering the ports of the State to ensure that the vessels comply with the requirements of the appropriate conventions and that they carry valid certificates to show that this is the case;
- (c) a team of experts who are capable of implementing the national contingency plan in the event of a maritime emergency. This calls for a variety of skills and such people need to be trained down to the smallest details of administration of the plan. There have been many examples where the efforts of a well-trained team have been frustrated because someone down the line had not been instructed in his duties in sufficient detail;
- (d) where States have issued or intend to issue licenses for offshore prospecting for oil or for its production from successful wells, it is essential to have available trained experts who can lay down the standards for safety and environmental protection and ensure that these are enforced.

Provision of Training

7.3 For those States which do not have an adequately staffed and trained maritime inspectorate to certify their own flag vessels or which can inspect visiting ships to ensure their compliance with international pollution prevention standards, provision of effective training is difficult. The proven method of producing the necessary skills is by properly supervised on-the-job training by working alongside an experienced inspector in a State which has had an inspectorate for many years. A number of nations have provided this type of experience training which has been arranged through IMO and in some cases with financial assistance from the United Nations Development Programme (UNDP) sources or fund from the Swedish International Development Authority (SIDA). Depending on the background of the trainee, such experience training may take from three to six months.

7.4 Training for contingency planning, however, is a more complex and ongoing activity. Basic training is best carried out in national seminars such as those which have been mounted in a number of States by IMO and by ROCC and IMO jointly in Cyprus. Certain States, notably France and Italy, have invited participation by representatives from Mediterranean States in their regular programmes of national training seminars and ROCC has facilitated the attendance of representatives from a number of Mediterranean States by granting fellowships within the constraints of its budget.

7.5 More advanced training is better organized on a regional or sub-regional basis since it has been found more meaningful and more economic to provide a course for a wider based and more experienced group. To run such courses nationally is often difficult since it is not always possible to release a sufficient number of people of the requisite calibre simultaneously.

7.6 The number of people requiring varying degrees of contingency planning training in a State needs to be carefully calculated and a trained manpower requirement and inventory should be an integral part of every national contingency plan.

7.7 Efficient and speedy reaction to an emergency is essential for successful response. Thus, it may well be desirable to divide a State into regions where a State has considerable coastline exposed to risk each region having its own trained team as well as a central co-ordinating team. Since emergencies are likely to happen at any time of the day or night and may well extend for weeks, it is imperative to have sufficient trained manpower to permit full shift working and sufficient reserve to cover sickness, vacation etc.

7.8 Training in new techniques, paper exercises, call-outs on a national and regional basis also need to be built into an ongoing retraining programme. Emergencies may not happen for long periods but when they do it is essential for the national contingency plan to swing smoothly into action with a full team trained to handle any foreseeable situation.

7.9 Personnel required for monitoring offshore oil prospecting or production should preferentially have had some prior academic training in oil exploration or some experience in the oil industry. To acquire the necessary insight into licencing requirements and environmental standards, it would probably be necessary to arrange on-the-job training with a State already experienced in offshore exploration. Knowledge of safety and emergency procedures on a rig should also be included in the training schedule.

The Role of ROCC in Training

7.10 As mentioned earlier, ROCC has endeavoured to facilitate training in combating oil pollution by granting fellowships to enable students to attend courses run by established organisations. Up to the end of 1983, 92 such fellowships had been taken up.

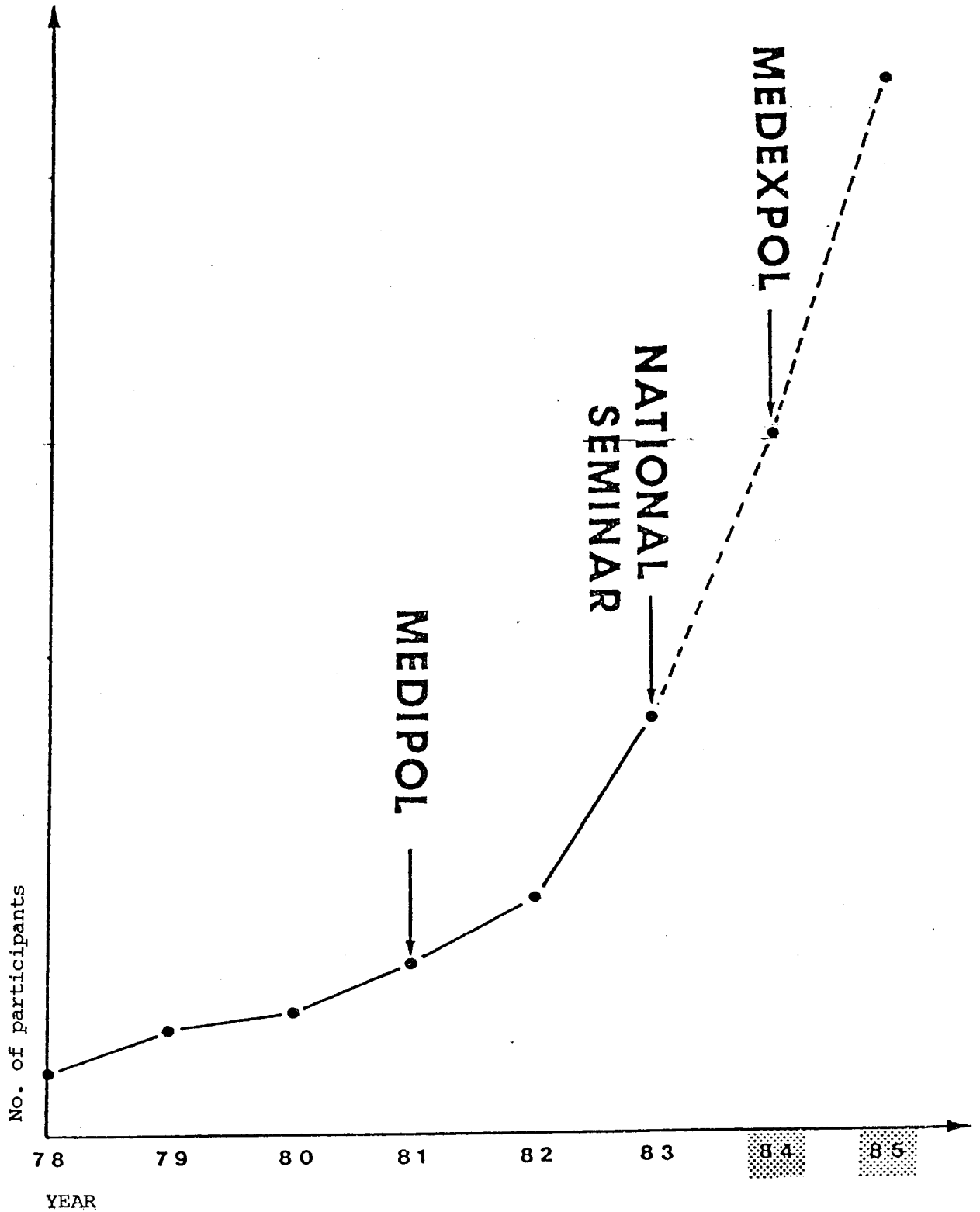
7.11 The main effort of ROCC in the training field has been to mount its MEDIPOL basic training course, beginning in 1978, and continuing annually thereafter.

7.12 In 1983 a pilot national seminar was mounted in Cyprus which was most successful and further national seminars are in the process of organization, the second of which will take place in Egypt. The national seminars, as well as MEDIPOL, are run in conjunction with IMO who supply back-up as required to ensure that a rounded course programme can be made available.

7.13 For 1984 ROCC mounted its first MEDEXPOL training programme which is an advance course for those who have attended MEDIPOL or its equivalent. Table 11 which is taken from a recent ROCC report, shows the regional training undertaken with the numbers attending each year and the cumulative total trained to date.

Table 11

Participants to ROCC Regional Training Programme



years	1978	1979	1980	1981	1982	1983	1984	1985
total / y.	25	20	4	23	27	74	120	145
cumulative	25	45	49	72	99	173	293	438

Future training areas to which ROCC could contribute

7.14 It is not inconceivable that ROCC's terms of reference might eventually be expanded to cover prevention matters. If this suggestion was accepted by Governments of the region, ROCC could play a valuable role in co-ordinating training (particularly on-the-job training) for inspectorates both with States within the Mediterranean area and with States in other parts of the world in conjunction with IMO.

7.15 Other specialist courses (e.g. on Crude Oil Washing) for which a State would not be able to produce sufficient candidates to mount its own course, could be organized on a regional basis by ROCC or, alternatively, ROCC could facilitate attendance at outside courses through its wider contacts.

8. INFORMATION EXCHANGE AND COMMUNICATIONS

8.1 In this extremely valuable, but often neglected, area of containing and reducing pollution of the sea by oil, ROCC Malta has played a highly effective role.

8.2 Within the constraints of its budget it has:

- (a) Established a Focal Point with each State party to the Barcelona Convention and has maintained close liaison with them. A list of Focal Points has been produced and circulated to each Contracting State and this is updated on a regular basis.
- (b) Published the ROCC News twice yearly in both the English and French languages. This provides regular information on experience of oil pollution in the area; reports and publications relevant to the various aspects of oil pollution; training courses available world-wide; new equipment and products; meetings of related bodies and information on ROCC activities. It also includes contributions from the coastal States on subjects of general interest to all States.
- (c) Produced an inventory of oil-combating equipment and anti-pollution materials available in each coastal State which is published and updated on a regular basis.
- (d) Similarly, a listing of all experts in the region who are available in times of emergency, is maintained and circulated to all member States. The number of experts available is in excess of one hundred.
- (e) Provided member States with an updated listing of anti-pollution equipment and material available of which it has knowledge, together with the names and addresses of the manufacturers.

- (f) Circulated to all Contracting States details of existing organizations both inside and outside the Mediterranean area who can offer specialist services in time of emergency. This inventory includes, inter alia:

Surveillance services
Salvage
Transfer of cargo
Impact assessment
Clean-up operations afloat and ashore
Disposal of recovered oil and debris

- (g) Maintained and circulated a regularly updated inventory of national contingency plans and bilateral and multilateral agreements. This not only covers existing fully operational plans, but also those in process of completion.
- (h) Carried out regular alert and communications exercises with national focal points to test the state of readiness of contingency organizations in the States.
- (i) Provided information, on request from States, covering all aspects of anti-pollution combating measures. To this end, it maintains close contacts on a regular basis with IMO and with UNEP.
- (j) Convened a workshop of focal points in June 1983 to discuss ways to improve and strengthen the assistance available to countries in the region. On the basis of this meeting, a work programme for 1984-1985 and 1986 has been prepared.
- (k) Convened a meeting in Malta of fourteen coastal States at which the importance of national and sub-regional contingency planning was explained, as a result of which several States have requested assistance in formulating their national contingency plans.

8.3 ROCC Malta is in a unique position to act as a disseminator of information to coastal States of all matters relating to the prevention of oil pollution of the Mediterranean Sea. Its role in this important aspect of the overall fight against pollution would be enhanced if the scope of the Centre is broadened as suggested in Section 5 and Recommendations.

RECOMMENDATIONS

1. The nine Mediterranean States not presently Contracting Parties to MARPOL 73/78 should be encouraged and assisted to become parties thereto (as a means of discharging their responsibilities as Contracting Parties to the Barcelona Convention).
2. Similarly, the eight States which are not Parties to the London Dumping Convention 1972 should, likewise, be encouraged to become Parties thereto.
3. States not Parties to the following Conventions should be encouraged to become Parties thereto and should have the benefits of membership explained to them:

International Convention on Civil Liability for Oil Pollution Damage 1969, (CLC 1969)

International Convention on the Establishment of an International Compensation Fund for Oil Pollution Damage, 1971 (IOPC FUND 1971)

International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969 (Intervention 1969)

4. States which are concerned as to the adequacy of their reception and treatment facilities should seek the advice of experts through IMO/UNEP sources. In this regard, it is worthwhile noting that Article 17 of MARPOL 73/78 requires that:

"The Parties to the Convention shall promote, in consultation with the Organization (IMO) and other International Bodies, with assistance and co-ordination by the Executive Director of the United Nations Environment Programme, support for those Parties which request technical assistance for:

- (a) the training of scientific and technical personnel;
- (b) the supply of the necessary equipment and facilities for reception and monitoring;
- (c) the facilitation of other measures and arrangements to prevent or mitigate pollution of the marine environment by ships";

Particular thought should be given to the suitability of arrangements for offloading diesel centrifuge sludge, bilge accumulations and bunker tank residues from all types of merchant ships.

5. Routine aerial surveillance of the Mediterranean Sea area (using specially equipped aircraft where possible) should be instigated by States with co-ordination and dissemination of reports of suspect sightings being undertaken by ROCC Malta. The deterrent effect on potential offenders of regular aerial surveillance has been most noticeable in areas where this has been instituted.

6. The terms of reference of ROCC should be expanded to include major spillages of hazardous substances other than oil and information collected by ROCC on the level of risks in the Mediterranean of such spillages, and the ways and means available to respond.
7. It is of prime importance that those States in the Mediterranean Sea area which do not already have operational national contingency plans for dealing with the threat of oil pollution to their coasts, should assign the highest priority to producing such a document and establishing the command structure required for its implementation. To the extent that it is felt desirable and necessary to request expert assistance to establish the national plan, advice should be sought from ROCC. National contingency plans are an essential prerequisite to building multi-lateral and sub-regional arrangements for mutual assistance in times of emergency which are an integral part of successfully dealing with marine disasters which cause pollution.
8. An overall review of contingency plans should be instituted to ensure:
 - (a) Compatibility of approach particularly by neighbouring States
 - (b) Standardisation of terminology wherever possible
 - (c) Optimisation of equipment (i.e. limit duplication and maximise efficiency in sub-regional groups)
 - (d) That risk assessment, particularly between neighbouring States and in sub-regional groupings, has been tackled on a consistent basis.
9. Communication facilities through the Mediterranean Sea area between National Focal Points and with the Regional Oil Combating Centre in Malta should be established on a 24-hours-a-day 365-days-a-year basis and each National Focal Point and ROCC should publish its list of contacts in order of priority for contact which should provide full cover for vacations, sickness, training absences, etc...
10. Arrangements should be established and circulated to all Focal Points setting out the agreed procedure, required documentation and rental charges between the Barcelona Plan States for the loan of personnel and equipment in times of emergency.
11. Inventories of anti-pollution equipment, experts in various disciplines and of trained personnel, that could be made available on loan to States in times of emergency should be computerised at a central location (probably ROCC Malta) permitting instant recall of the particulars of any person or piece of equipment. Such programmes should also show the name and method of contact for the person who has authority for release.

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