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SURVEY OF STATE PRACTICE RELEVANT TO INTERNATIONAL LIABILITY FOR INJURIOUS CONSEQUENCES ARISING OUT OF ACTS NOT PROHIBITED BY INTERNATIONAL LAW*

Study prepared by the Secretariat

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Annexes

INTRODUCTION

1. The International Law Commission, at its thirty-fifth session, requested that three studies, prepared by the Secretariat on the review of multilateral and bilateral agreements and judicial decisions and State practice other than agreements relevant to the question of international liability for injurious consequences arising out of acts not prohibited by international law, be made widely available. 1/ The three studies were prepared between 1982 and 1983 for the use of the Special Rapporteur for that topic. At the request of the Commission, the Secretariat has now updated and combined them into a single study.

2. It is not the purpose of the study to define, alter or in any way affect the scope and the framework of the subject under consideration by the Commission. The outline of the study and the individual papers were prepared when the Commission was still at the preliminary stage of examining the scope and the framework of the topic. Based on prior preliminary studies and taking into account the reports of the Special Rapporteur as well as the Commission's reports on the question, the Secretariat examined it in a factual context. In that context, State practice was examined. The presentation of material and information in this document does not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning its contents nor on the positions that States may have adopted regarding specific cases or agreements referred to therein.

3. Briefly, the factual context is marked by the increasingly intense use in many different forms of the resources of the planet for economic, industrial or scientific purposes. Because of economic and ecological interdependencies, activities occurring within or beyond the territorial control or jurisdiction of States may have injurious impacts on other States or their subjects. To cite only one example, at this stage of the industrial revolution, maintenance and operation of productive plants may cause harmful consequences which may cross boundaries, causing atmospheric changes through "acid rain" or through river and coastal waters. Furthermore, the scarcity of natural resources, demands for more efficient use of resources and creation of substitute resources have led to innovative production methods, sometimes with unpredictable consequences. 2/ This factual aspect of global interdependency has been demonstrated by frequent events which result in injuries beyond the territorial jurisdiction or control of the acting State. 3/

1/ Official Records of the General Assembly, Thirty-eighth Session, Supplement No. 10 (A/38/10), para. 286.

2/ It is not the purpose of this study to describe the factual instances of global interdependency. The above brief description was necessary to clarify the basis for the choice of materials on State practice.

3/ Acting State, in this study, refers to the State in or under whose territorial jurisdiction or control an activity that has caused or may cause injuries, beyond its terrtorial jurisdiction or control, to other States or their subjects has taken place.

4. Activities having an extraterritorial injurious impact are also conducted by private entities. They operate within the territorial jurisdiction or control of the acting State, within the shared domain or within the territorial jurisdiction or control of the injured State. 4/ Private entities, due to economic considerations, transfer from one State to another hazardous and heavily polluting industries such as steel, aluminum, asbestos and certain toxic chemicals. 5/ The injuries may be considerable. Reports indicate that these injuries are not limited to the recipient State, but sometimes cross into neighbouring States, indeed occasionally even to the original exporting State. 6/

5. Acts with extraterritorial injurious impact have always been met with in international relations and have been of concern to international law. States appear to have recognized that in the exercise of their exclusive authority within or beyond their territories, over their ships, for example, they are expected to give due regard to the interests of other States that may adversely be affected. The study has reviewed a number of examples of State co-operation, evidenced by treaties, in which the parties have agreed on procedures under which certain activities may be conducted. The substance of these agreements reveals some procedural and substantive principles by which the parties have accommodated their conflicting interests: "good-neighbourliness", "due care", "equitable principles", etc.

4/ Injured State or affected State refers to the State which has suffered or may suffer injuries as a result of an activity by the acting State. The injuries may be to the State's property or the private property of its subjects.

5/ These polluting industries are transferred sometime from developed to developing countries where the labour and production costs are lower than those in the developed countries and standards of environmental regulations are looser or lax in enforcement. See Castleman and Barry, The Export of Hazardous Factories to Developing Nations (1978).

6/ North-South: Programme for Survival (1980).

States members of the Organisation for Economic Co-operation and Development (OECD) have attempted to provide for environmental protection in Guidelines for Multinational Enterprises. They are to be reviewed in 1984 by the OECD Council. See OECD, Economic and Ecological Interdependence, (1982), p. 66.

The Inter-Governmental Working Group on Transnational Corporations has been developing a comprehensive draft code of conduct for transnational corporations. The draft includes a section on environmental protection which provides for measures to avoid and remedy environmental damage, to supply relevant information to developing countries about the potential hazards involved in certain industrial activities, etc. The environmental protection principles of the code of conduct provides:

6. Materials examined in this study are selected and analysed on the basis of their relevance to the concepts of good-neighbourliness, due care, equitable principles, prior negotiation and consultation, balancing interests and preventing and minimizing injuries to others in undertaking activities within or beyond the territorial jurisdiction or control of States. It is not suggested that every example of State practice examined has dealt only and directly with acts "not prohibited by international law". Selection was dictated by relevance of their concepts to the liability topic or the pertinence of the activities examined, whether or not they were wrongful. It is therefore pertinent to consider the handling of some disputes in which there was no general agreement as to the lawfulness or unlawfulness of the acts or omissions giving rise to the injurious consequences; for example, the atmospheric H-bomb tests in the 1950s and in the 1970s generated debates about their lawfulness among jurists. The lawfulness of the United States H-bomb test on the high seas of the 1950s, although never submitted for judicial decision was discussed extensively by jurists. 7/ A similar

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"Environmental protection

"44. Transnational corporations, in carrying out their production activities, shall comply with national policies, laws and regulations of the countries in which they operate with regard to preservation of the environment. They shall take steps to improve the environment and make efforts to develop and apply adequate technologies for this purpose.

"45. Transnational corporations shall supply to the authorities of the countries in which they operate all relevant information concerning:

"(a) Features of their products or processes which may harm the environment and the measures and costs required to avoid harmful effects;

"(b) Prohibitions, restrictions, warnings and other regulatory measures imposed in other countries, on grounds of protection of the environment, on products and processes which they have introduced or intend to introduce in the countries concerned.

"46. Transnational corporations shall be responsive to requests from Governments of the countries in which they operate and be prepared where appropriate to co-operate with international organizations in their efforts to develop and promote national and international standards for the protection of the environment." (E/C.10/1983/S/4, pp. 11-12).

7/ See, for example, McDougal and Schlei, "The hydrogen bomb tests in perspective: lawful measures for security", Yale Law Journal, vol. 64 (1955), p. 648; McDougal, "The hydrogen bomb tests and international law of the sea", American Journal of International Law, vol. 49 (1955), p. 356; Margolis, "The hydrogen bomb experiments and international law", Yale Law Journal, vol. 64 (1955), p. 624; and Taubenfeld, "Nuclear testing and international law", South Western Law Journal, vol. 16 (1963), p. 365.

debate was raised over the French nuclear testing. That was submitted to the International Court of Justice for a decision, but the judgement was not rendered on the merits of the case. 8/

7. Even though the treaties deal with matters which may be characterized as "wrongful acts", they deal with problems relevant to the topic of international liability and have been included for that reason. These treaties demonstrate the relevance of and the forms in which the concepts of due care, good-neighbourliness, etc. have been utilized. When these treaties are examined in detail, they reveal how a particular activity with potential injuries has been undertaken under some form of supervision, what are the requirements of preventive measures in order to avoid or at least to minimize injuries to other international actors, what kind of and at what point injuries become unacceptable and entail liability and, finally, what are the remedies. Since this is a survey of past trends, treaties are selected whether or not they are still in force.

8. There are a large number of bilateral agreements which have applied the concepts of good-neighbourliness, due care, etc. in the utilization of shared rivers. Since most of those agreements were examined in the third report of the Special Rapporteur on the topic of non-navigational uses of international watercourses (A/CN.4/348) of 1981, only some of them have been examined in this study.

9. Judicial decisions of domestic courts, of international courts and of arbitral tribunals involving efforts by third-party decision makers are relevant for the substantive principles they examine and sometimes for the factors they balance against one another. Documents exchanged between foreign offices and governmental officials are important sources of State practice, as are settlements of disputes through non-judicial methods. Although they are not products of conventional judicial procedure, they may represent a pattern in trends regarding substantive issues in dispute. Statements made by the State officials involved as well as the content of the actual settlement of disputes will be examined for their possible relevance to the substantive principles of liability.

10. The study has not ignored the difficulties in evaluating a particular instance as "evidence" of State practice. 9/ Different policy may motivate the conclusion

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8/ Nuclear Tests (Australia v. France) and (New Zealand v. France), I.C.J. Reports 1973, p. 99.

9/ For example, abstention by States from engaging in activities which, though lawful, may cause injuries beyond their territorial jurisdiction, may or may not be relevant to creating customary behaviour. The Permanent International Court of Justice and its successor, the International Court of Justice, have observed that the mere fact of abstention, without careful consideration of the conditioning factors, is insufficient proof of the existence of an international legal custom. Abstentions by States from acting in a certain way may have a number of reasons, not all of which have legal significance (S.S. Lotus, P.C.I.J., Series A, No. 10 (1929), p. 28). A similar point was made by the International Court of Justice in

of treaties or decisions. Some may be compromises or accommodations for extraneous reasons. But repeated instances of State practice, when they follow and promote similar policies, may create expectations about the authoritativeness of these policies in future behaviour. Even though some of the policies might not have been explicitly stated in connection with the relevant events, or they may purposely and explicitly have been left undecided, continuous similar behaviour may lead to the creation of a customary norm. Whether or not the materials examined here are established as customary law, they demonstrate a trend in expectations and may contribute to clarification of policies about some detailed principles of the international liability topic. Practice also demonstrates ways in which competing principles, such as "State sovereignty" and "domestic jurisdiction", are to be reconciled with the new norms.

11. In using State practice one must be cautious in extrapolating principles, for the more general community expectations about the degree of tolerance concerning the injurious impact of activities can vary from activity to activity. For example, the general community expectations about appropriate behaviour concerning economic and monetary activities may be different, as far as their extraterritorial injurious impact is concerned, from those regarding experimental, industrial, self-defence, self-help, environmental, etc. activities.

12. The materials examined in this study are not, of course, exhaustive. They are primarily related to activities concerning the physical use and management of the environment, for State practice on regulating activities causing injuries to other States has been developed more extensively in this area. The format of the study has also been designed to be a useful source material, hence, relevant quotations from treaties, judicial decisions and official correspondence have also been reproduced.

13. The outline of the study has been formulated on the basis of functional problems which may appear relevant to the topic of international liability. Since the focus of the topic appears to be on the continuing flow of activities from the initiation to the completion stage, the study also follows a similar chronological order.

14. Chapter I begins with the description of activities which have been regulated for their possible extraterritorial injurious impact both in terms of their nature and their originating location.

(continued)

the Asylum Case, (I.C.J. Reports 1950, p. 286) and in the North Sea Continental Shelf Cases (I.C.J. Reports 1969, p. 44, para. 77). See also C. Parry, The Sources and Evidence of International Law (1965), pp. 34-64.

However, the Court in the Nottebohm Case relied on State restraint as evidence of the existence of an international norm restricting freedom of action (I.C.J. Reports 1955, pp. 21-22).

15. Chapter II examines the process of initiation of activities which may entail extraterritorial injurious impact. It points out different stages of this process in which the acting State, prior to undertaking the activity, attempts to assess the impact of the activity on other States and international actors. State practice demonstrates the existence of a rather complex procedure for assessing the impact of activities, such as collecting data by acting States about the activities and their possible impact, negotiating with potential affected (injured) States and balancing the interests involved by correlating the benefits of carrying out the activity with its cost, etc.

16. Chapter III examines the procedure by which attempts are made to prevent or at least minimize extraterritorial injuries. This chapter reviews the monitoring system provided in treaties and recommended in State practice. It also points out the types of or recommended changes in activities in order to prevent or minimize their injurious impact. It appears that monitoring systems may involve co-operation among the acting and injured States, or may be entrusted to an independent non-governmental body, etc.

17. Chapter IV examines the requirements of guarantees for payment of compensation in relation to activities with strong potential extraterritorial injurious impact whose performance has been agreed upon by the acting and the injured State.

18. Chapter V examines the issue of liability for extraterritorial injurious impact. Despite compliance with procedural requirements designed to prevent or minimize damage, injuries may be suffered by other States and their subjects. This chapter examines the issue of liability. It points out that in determining the liability of the acting State a balance is struck between the interests of the parties and those of the larger community. It also examines the extent to which the operator of the activity or the State in whose territory, or under whose control the activity has taken place is liable. Chapter V also examines circumstances which preclude the liability of the acting State.

19. Finally, chapter VI examines the issue of compensation and damages. It reviews the relevant treaty provisions and forms of State practice concerning compensable injuries and other forms of compensation. It points out that some treaties provide limitations on compensation. It examines the authorities recognized in State practice as competent to decide on compensation and finally reviews the enforceability of the judgements awarding compensation.

I. DESCRIPTION OF ACTIVITIES CAUSING INJURIES BEYOND THE TERRITORIAL JURISDICTION OR CONTROL OF THE STATE WHERE THEY ARE CONDUCTED

A. Forms of activities

20. Activities causing injuries beyond the territorial jurisdiction or control of the acting State vary. They may include use of air space, nuclear activities, industrial activities, conservation and utilization of economically important resources, and even communication and broadcasting. Some of these activities may cause more substantial injuries than others, and the injuries could sometimes be devastating. State interactions appear to demonstrate no significant relationship between the forms of activities and the substantive or procedural requirements regulating them. However, a relationship exists between the injury or harm those activities may cause and their substantive and procedural requirements, i.e. if and when they are permitted to be performed. The scrutiny in compliance with the procedural requirements, and in the implementation of the concepts of duty of care, good-neighbourliness, etc. appear to become more complex as the possibility and extent of injury resulting from the activities become more substantial. Activities causing injuries that could be devastating may be banned outright. Some nuclear testing may be included in this category, as illustrated by the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under water. Similarly the emplacement of nuclear weapons and other weapons of mass destruction on the sea-bed and the floor and the subsoil thereof, 1/ as well as the military or any hostile use of the environmental modification techniques, 2/ have been prohibited by multilateral treaties. The treaties dealing with the two latter activities have provided for monitoring or "verification" of compliance with treaty obligations by its signatories. Therefore, regardless of the similarity in the "form" of the last three activities and their regulation by treaties, the actual reason for banning them is the extent of their harmful consequences, which has led to a policy decision by their signatories to ban them altogether. Sometimes the extent of injuries may not lead to a total banning of an activity, but to partial or temporary banning or to substantial revision of the form in which the activity may be carried out, such as in the Trail Smelter Arbitration.

21. At a very general level, injuries caused by activities beyond the territorial jurisdiction or control of the acting State may be divided into three categories. The first category covers injuries generally considered minor and expected to be tolerated among States without compensation. The second category is not generally expected to be tolerated, unless with the consent of the injured State, or against payment of compensation. The third category comprises injuries that are devastating and not generally expected to be tolerated at all. State practice shows that it is extremely difficult to identify the thresholds separating the

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1/ Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil Thereof (11 February 1971).

2/ Convention on the Prohibition of military or any other Hostile Use of Environmental Modification Techniques (10 December 1976).

three categories of injuries. It may be easier to pinpoint activities leading to the third category of injuries; these activities are normally banned. Treaties banning some of them have referred in their preamble to the more general community expectations, the promotion of peace and security and other principles of the United Nations Charter. The main difficulties arise in identifying the threshold between the first and the second categories of injuries, i.e. for what kind of activities with what kind of injuries does the acting State have to consult the potentially injured State, or take measures to prevent the injury? It appears, so far, that State practice has not dealt with this question categorically and in a single formula. Sometimes it has used the nature of resources being used as a point of departure, such as the use of shared rivers, the high seas, air space, etc. At other times it has tried to determine the expectation shared by the parties. Expectations are embodied in treaties, official correspondence and the overall State interactions. At the most general level, State practice, both in treaties and in judicial decisions, has referred to the concepts of good-neighbourliness, due care, equitable principles, etc. as guidlines to distinguish activities with tolerable injuries from those resulting in the second category of injuries.

22. It is not only conducting activities which may cause extraterritorial injuries; inactivity may also lead to injuries. The Corfu Channel decision leads to this conclusion. The decision by the German Constitutional Law Court in the case of the federated States of Württemberg and Prussia v. Baden regarding their rights in the flow of the waters of the Danube bears on the question of inactivity. In holding that "Baden must desist from injuring her neighbor" the Court further stated Baden did "not need to eliminate the natural loss of water that would accrue in the storage area even if the dam were not there, but only the augmented seepage caused by the dam." 3/ As to the prohibitions of Baden against taking measures to make it possible for the river flow to go onward rather than to run off from the Danube to the Aash, it was held that Baden could not justify the prohibitions on the ground that "in this way she is only maintaining the natural conditions with respect to the water"; that, while a State "is not obligated to interfere in the interests of another State with the nautral processes affecting an international river", the action of Baden in this particular case amounted to "the neglect of an orderly work of maintenance" along this stretch of the river. The Court held that Baden was "therefore required to eliminate the increased seepage caused by her inactivity". 3/

Multilateral agreements

23. Many activities with possible extraterritorial injurious consequences have been regulated by multilateral treaties. They include the use of nuclear materials, industrial activities, disposal of wastes, etc. Multilateral treaties regulating nuclear activities include the Vienna Convention on Civil Liabilities for Nuclear Damage, the Convention on the Liability of Operators of Nuclear Ships, the Convention on Third Party Liability in the Field of Nuclear Energy and the

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3/ Hackworth, Digest of International Law, vol. I, pp. 596-599. Emphasis added.

Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water.

24. The Convention on Damage caused by Foreign Aircraft to Third Parties on the Surface covers some space activities, while the Convention on International Liability for Damage caused by Space Objects deals with outer space activities.

25. Some polluting activities are covered by the Convention on the Protection of Lake Constance from Pollution, the International Convention on Civil Liability for Oil Pollution Damage, the International Convention for the Prevention of Pollution from Ships and the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter. The Convention on the Law of the Sea provides in article 195 that States "shall act so as not to transfer damage or hazards from one area to another or transform one type of pollution into another". Article 196 of the Convention refers to pollution resulting from the use of technologies or the intentional or accidental introduction of species, alive or new, to a particular part of the marine environment which may cause significant and harmful changes thereto.

26. Among the conventions related to conservation of economically important fish stocks, the International Convention for Conservation of Atlantic Tunas and the International Convention for ther Northwest Atlantic Fisheries may be named.

27. Conventions dealing with communications and broadcasting include the International Radio-Telegraph Convention, with General Regulations and Additional Regulations, the International Telecommunications Convention and the International Convention concerning the use of broadcasting in the cause of peace.

Bilateral agreements

28. A great number of bilateral agreements are related to utilization of shared lakes or rivers between contracting States. Bilateral agreements may also be related to nuclear activities and materials. For example, the Convention between Belgium and France on Radiological Protection with regard to the Installations of the Ardennes Nuclear Power Station is concerned with radiological protection relating to a nuclear power station belonging to the Société d'Energie nucléaire franco-belge des Ardennes, a joint-stock company between France and Belgium, operating in French territory near the Belgian border. The exchange of notes between France and the Union of Soviet Socialist Republics on the prevention of accidental or unauthorized use of nuclear weapons relates to the use of nuclear materials that may cause injuries to the other contracting party.

29. Bilateral agreements have been concluded to regulate the transportation of hazardous substances and the conduct of activities affecting climate and weather. The former is the subject of an agreement between the Government of the United Kingdom of Great Britain and the Government of the Kingdom of Norway relating to the transmission of petroleum by pipeline from the Ekofisk field and neighbouring areas to the United Kingdom. A similar agreement has also been concluded between

the Federal Republic of Germany and Norway, 4/ and weather modification in Canada and in the United States has been regulated by a treaty. 5/

30. There are some bilateral agreements which deal with any activities which may have harmful consequences in the neighbouring State across the border. The most recent agreement of this kind was signed between the United States and Mexico on 14 August 1983. 6/ The preambular paragraph of the Agreement recognizes the importance of a "healthful" environment to the long-term economic and social well-being of present and future generations of each country as well as of the global community. Article 2 of the Agreement provides that the parties will adopt the appropriate measures to prevent, reduce and eliminate sources of pollution in their own territories which affect the border areas of the other.

31. Some bilateral agreements deal with the use of land close to frontier areas, such as the Agreement between the Government of the Federal Republic of Germany and the Austrian Federal Government concerning co-operation with respect to land use.

Judicial decisions and State practice other than agreements

32. State practice regulating pollution from industrial uses include the Trail Smelter Arbitration, the Peyton Packing Company and Casuco Company diplomatic correspondence (United States v. Mexico) and the Georgia v. Tennessee Copper Company decision.

33. The Nuclear Tests Cases, Eniwetok Atoll Tests Awards, Christmas Islands Tests and the Claim Against the Union of Soviet Socialist Republics for Damage Caused by Soviet Cosmos 954 deal with nuclear activities.

34. Some of the judicial decisions dealing with utilization of international rivers are the Lake Lanoux Arbitration, Société d'Energie Electrique du Littoral Méditerranéen v. Compagnia Imprese Elettriche Ligure (the Roja), Missouri v. Illinois and Kansas v. Colorado.

35. The Fisheries Jurisdiction, Anglo-Norwegian Fisheries and North Atlantic Coast Fisheries Case regulate fisheries activities whereas the North Sea Continental Shelf Case, the Arbitration Between Petroleum Development (Trucial Coast) Ltd. and the Sheikh of Abu Dhabi and Tunisia v. the Libyan Arab Jamahiriya cover the use of the ocean subsoil by the coastal States.

4/ Agreement between the Federal Republic of Germany and the Kingdom of Norway Relating to the Transmission of Petroleum by Pipeline from the Ekofisk Field and Neighbouring Areas to the Federal Republic of Germany (16 January 1974).

5/ Agreement between Canada and the United States of America Relating to the Exchange of Information on Weather Modification Activities (26 March 1974).

6/ Agreement between the United States of America and the United Mexican States on Cooperation for the Protection and Improvement of the Environment in the Border Areas (14 August 1983).

36. Other activities forming the subject matter of State practice are the development of power plants and stations, the Roja; counterfeiting, United States v. Arjona; highway construction, and the Smugglers and Goat Canyon diplomatic correspondence (United States/Mexico).

B. Originating location of activities

37. Activities conducted by the acting State or its subjects with injurious consequences to other States and their subjects may occur within or beyond the territorial jurisdiction or control of the acting State. They may occur in the shared domain, but cause injury to another State or its subjects either in the shared domain or in the territorial jurisdiction or control of the injured State. Activities may also occur within the territorial jurisdiction or control of the injured State itself. Although the location of activities with injurious impact is relevant, it is not the key factor in regulating them. The location of activities appears to bring into play other relevant and competing interests and relevant principles of international law; for example, if an activity occurs on the high seas, the interests and rights of the acting State are the utilization of resources, including waters of the high seas, and the relevant international law principle is the principle of the freedom of the high seas. The originating location of activities may also determine the question of jurisdiction over any possible dispute regarding the consequences of the activities. State practice demonstrates that the key issue in regulating, substantively or procedurally, an activity with injurious consequences is the extent and kind of injury it causes and its impact on the functioning of the community processes of States, regardless of the originating location of the activity.

38. Section B is primarily descriptive. It gathers and describes relevant parts of treaties and judicial decisions bearing on activities occurring within or beyond territorial jurisdiction or control of the acting State, but causing injuries to other States or their subjects.

1. Within territorial jurisdiction or control

39. Utilization of resources shared between two or more neighbouring States or activities close to the frontier area comprise most of the activities occurring within the territorial jurisdiction or control of one State and causing injuries to neighbouring States.

Multilateral agreements

40. The Treaty concerning Lake Constance deals with shared resources. Under paragraph 2 of article 1 of the Treaty the riparian States are to take the necessary measures in their respective territories to prevent any increase in the pollution of Lake Constance and, in so far as is possible, to improve the quality of its waters. To that end, the riparian States are to apply strictly, in respect of Lake Constnce and its affluents, all provisions on water protection which are in force in their territories.

41. The Convention on the Protection of the Environment between Denmark, Finland, Norway and Sweden is a treaty between neighbouring States, but relates to a wider group of activities. Article 1 of the Convention defines the "environmentally harmful" activities as being the discharge from the soil or from buildings or installations of solid or liquid waste, gas or any other substance into watercourses, lakes or the sea and the use of land, the sea-bed, buildings or installations in any other way which entails, or may entail, environmental nuisance by water pollution or any other effect on water conditions, sand drift, air pollution, noise, vibration, changes in temperature, radiation, light, etc. The Protocol to the Convention states that discharge from the soil, or from buildings or installations of solid or liquid waste gases or other substances into watercourses, lakes or the sea shall be regarded as environmentally harmful activities only if the discharge entails or may entail a nuisance to the surroundings. Therefore the mere discharge of "polluting" substances is not sufficient to bring it under the régime of the Convention.

42. Acts covered by the Convention on Third-Party Liability in the Field of Nuclear Energy and the Vienna Convention on Civil Liability for Nuclear Damage may also be included in the category of activities occurring, most probably, within the territorial jurisdiction or control of a State but causing extraterritorial harmful effects. Parties to the Conventions, however, are not neighbouring States of a particular region; the Conventions are open to all States.

43. The language used in the Convention of the Law of the Sea is more ambiguous on the originating location of activities. Article 195 of the Convention provides that "In taking measures to prevent, reduce and control pollution of the marine environment" States shall behave in certain ways. Thus the originating location of polluting activities may be within or beyond territorial jurisdiction or control of States.

Bilateral agreements

44. The location of most of the activities regulated by bilateral agreements is within the territorial jurisdiction or control of the States parties to the agreements. A number of bilateral agreements relate to the use of a resource shared by the two States, such as rivers. In this group of agreements, activities may occur in the section of the shared resource which is within the territorial jurisdiction of either State or within the section of the resource shared by both States. Most bilateral agreements, however, have dealt with activities occurring within the territorial jurisdiction or control of one State. For example, in an agreement between Norway and the Soviet Union, 7/ the parties agree not to exploit the mineral deposits near their frontier in a way which may harm their respective territories. Thus they agree, in order to safeguard the frontier line, to have a belt 20 metres wide on either side within which no such activity may take place, unless in exceptional cases and by agreement between the parties. Article 18 of the Agreement provides:

7/ Agreement between the Royal Norwegian Government and the Government of the Union of Soviet Socialist Republics concerning the régime of the Norwegian-Soviet frontier and procedure for settlement of frontier disputes and incidents (29 December 1949).

"Article 18

"1. Mineral deposits near the frontier line may not be so prospected or worked as to harm the territory of the other Party.

"2. In order to safeguard the frontier line, there shall be a belt 20 metres wide on either side thereof in which the work referred to in paragraph 1 of this article shall ordinarily be prohibited and shall be permitted only in exceptional cases by agreement between the competent authorities of the Contracting Parties.

"3. If in any particular case it is not expedient to observe the belts referred to in paragraph 2 of this article, the competent authorities of the Contracting Parties shall agree on other measures necessary to safeguard the frontier line."

45. Some bilateral agreements deal with activities occurring within territorial jurisdiction of the "injured" State. For example, in an agreement between the Federal Republic of Germany and Austria 8/ the Federal Republic of Germany has agreed to establish a safety zone in its own territory for an airport to be established in Salzburg in Austria. Hence, activities which may cause injuries in the territory of the Federal Republic of Germany may be caused in that territory but not necessarily by subjects of that State. The injury may be the result of the operation of the Austrian airport.

46. The passage of nuclear ships to or from foreign ports has become the subject of bilateral agreements for possible nuclear or other kind of damage. These treaties have approached the question of territorial jurisdiction or control functionally. Accordingly, they are relevant to nuclear damage occurring within the territory of the host State if the nuclear incident has occurred within that territory. For example, under article 20 of the 1970 Treaty between the Federal Republic of Germany and Liberia, 9/ liability under the Treaty shall apply to nuclear damage occurring within Liberian Territory or Liberian waters, if the nuclear incident has occurred within Liberian territory or Liberian waters. Also article VIII of a 1964 treaty between the United States and Italy regarding the use

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8/ Agreement between the Federal Republic of Germany and the Republic of Austria concerning the effects on the territory of the Federal Republic of Germany of construction and operation of the Salzburg airport (19 December 1967).

9/ Treaty between the Republic of Liberia and the Federal Republic of Germany on the Use of Liberian Waters and Ports by the U.S. Otto Hahn (27 May 1970).

of Italian ports by the nuclear ship N.S. Savannah 10/ stipulates that the United States is liable for "any damage to people or goods deriving from a nuclear incident in which the N.S. Savannah may be involved within Italian territorial waters." Similar provisions may be found in agreements between the United Staes and Ireland 11/ and the United States and the Netherlands. 12/

10/ Agreement between the Government of the United States of America and the Government of Italy on the Use of Italian ports by the N.S. Savannah (23 November 1964). See also the exchange of notes of 16 December 1965 between the United States and Italy constituting an agreement concerning liability during private operation of the N.S. Savannah.

11/ Exchange of notes of 18 June 1964 constituting an agreement relating to public liability for damage caused by the N.S. Savannah. Article (1) of the Agreement provides:

> "The United States Government shall provide compensation for all loss, damage, death or injury in Ireland (including Irish territorial seas) arising out of or resulting from the operating of N.S. Savannah to the extent that the United States Government, the United States Maritime Administration or a person indemnified under the Indemnification Agreement is liable for public liability in respect of such loss, damage, death or injury."

12/ Agreement on Public Liability for Damage caused by the N.S. Savannah (with annex) (6 February 1963). Article 7 of the Agreement provides:

> "This Agreement relates only to a nuclear incident occurring during a voyage of the N.S. Savannah to or from the Netherlands or its presence in Netherlands waters."

See also the Operational Agreement on Arrangements for a Visit of N.S. Savannah to the Netherlands (20 May 1963).

Judicial decisions and State practice other than agreements

47. Judicial decisions and official correspondence relating to this group of activities stem from conficts primarily between neighbouring States in relation to the use of resources shared between them, such as rivers and airspace. The sources point to a broad range of activities taking place in the territory of the acting State or within its control which may cause injury to other States and their subjects. For example, the tribunal in the Lake Lanoux Arbitration stated that pollution of waters, changed chemical composition or temperature of waters, and diminution of the volume of water flow resulting from the use by one State of international waters within its borders could violate the rights of the affected State and give rise to a "duty of care" in carrying out the activity. In even broader language, the tribunal in the Trail Smelter Arbitration stated that

> "No State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein." 13/

Even more generally, the International Court of Justice in the Corfu Channel stated that it is "every State's obligation not to allow knowingly its territory to be used for acts contrary to the rights of other States." 14/

48. An activity originating within the territory of the acting State but not relating to the use of resources shared between two neighbouring States is the launching of satellites. For example, Canada, through correspondence with the Soviet Union, attempted to impose liability for the crash of a Soviet nuclear-powered satellite on Canadian soil.

49. In the Alabama Claims, the United States sought compensation for injuries resulting from the building and outfitting, in British ports, of Confederate ships which were permitted to leave those ports in breach of Britain's duty of neutrality.

2. Beyond territorial jurisdiction or control

Multilateral agreements

50. A number of multilateral agreements have regulated activities occurring beyond territorial jurisdiction or control of acting States, but causing injuries to other States and their subjects either in the shared domain or within territorial jurisdiction of the injured State. A number of treaties cited in this section deal with nuclear materials. Article XIII of the Convention on the Liability of Operators of Nuclear Ships states that the Convention applies to nuclear damage

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13/ United Nations, Reports of International Arbitral Awards, vol. 3, p. 1965.

14/ I.C.J. Reports 1949, p. 22.

caused by a nuclear incident occurring in any part of the world and involves the nuclear fuel of or radioactive products or waste produced in a nuclear ship flying the flag of a contracting State. Thus, with this broad language, such a damage-causing nuclear incident may occur within or beyond the territorial jurisdiction or control of States. Article XI, paragraph 2, of the Vienna Convention on Civil Liability for Nuclear Damage, in an attempt to specify the competent authority to decide on the liability issue, refers to the originating location of the activity. It states that where the nuclear incident occurs outside the territory of any contracting Party, or where the place of the nuclear incident cannot be determined with certainty, jurisdiction over such actions shall lie with the courts of the installation State of the liable operator.

51. The Convention on the Dumping of Wastes at Sea regulates certain aspects of activities relating to the use of the sea with the assumption that such particular use, if not regulated, will cause injury to a number of coastal States. Sometimes particular activities, including the uses of resources beyond the territorial jurisdiction or control of States, have a noticeable economic impact on other States and their subjects. These activities have also been regulated by multilateral conventions. For example, exploitation of some resources of the sea could come under this category. Some of the conventions dealing with the exploitation of sea resources bear on conservation of certain fishery resources, with strong economic implications. Thus they differ from conventions relating to general conservation; they deal with resources when they affect the interest of coastal States in a much more quantitative, tangible, immediate and economic form. In the preamble of the International Convention for Conservation of Atlantic Tunas, the parties explicitly recognize their "mutual interest" in the populations of tuna and tuna-like fish found in the Atlantic Ocean, and in maintaining the populations of these fish at levels which will permit the maximum sustainable catch for food and other purposes. Similarly, in the preamble of the International Convention for the Northwest Atlantic Fisheries, the parties explicitly recognize their shared interest in the conservation of the fishery resources of the north-west Atlantic Ocean.

52. The International Convention relating to Intervention on the High Seas in Cases of Oil Pollution Casualties provides that parties to the Convention may take such measures on the high seas as may be necessary to prevent, mitigate or eliminate grave and imminent danger to their coastline or related interests from pollution, etc. following a maritime casualty. Such actions on the high seas almost always cause injuries to at least the flag State. If such measures taken by the coastal State go beyond what is necessary to prevent the injury, the coastal State shall be obliged to pay compensation to the extent of the damage caused by measures which exceed those which are reasonably necessary. In considering whether the measures are proportionate to the damage, account shall be taken of (a) the extent and probability of imminent damage if those measures are not taken; (b) the likelihood of those measures being effective; and (c) the extent of the damage which may be caused by such measures (art. V). Thus any party which takes measures in contravention to the above requirements and causes damage to others shall be obliged to pay compensation. Article 1 of the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under water prohibits nuclear explosions at any place causing radioactive debris outside the territorial limits of the State

under whose jurisdiction or control such explosion is conducted. In that respect the Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the subsoil thereof should also be mentioned. The Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques deals with environmental modification techniques which could occur either within or beyond the territorial jurisdiction or control of the acting State.

Bilateral agreements

53. In agreements regarding the use of foreign ports by nuclear ships, the State whose nuclear ship is visiting the foreign ports has accepted liability for injuries its ships may cause outside the territory of the host State during a passage to or from its port if the damage is caused in the host State or on ships of the host State registry. 15/

Judicial decisions and State practice other than agreements

54. Although almost all the judicial decisions and official correspondence dealing with questions of extraterritorial injuries surveyed in this study relate to activities occurring within territorial jurisdiction or control of a State, at least one decision here on activities occurring in the shared domain. In the Fisheries Jurisdiction Cases 16/ the United Kingdom and the Federal Republic of Germany objected to the unilateral expansion of the fishery zone by Ireland, which they claimed to have been extended to the high seas.

15/ For example, article 20 of the 1970 Treaty between the Federal Republic of Germany and Liberia provides that the Federal Republic of Germany will be liable for injuries its nuclear ship may cause "outside Liberian territory or Liberian waters during a passage to or from a Liberian port or to or from Liberian waters". See also the Agreement between the Government of the United States of America and the Government of Italy on the Use of Italian ports by the N.S. Savannah (23 November 1964), and the exchange of notes of 16 December 1965 between the United States and Italy constituting an agreement concerning liability during private operation of the N.S. Savannah. Similar agreements were concluded between the United States and Ireland and between the United States and the Netherlands: the exchange of notes of 18 June 1964 constituting an agreement relating to public liability for damage caused by the N.S. Savannah; the Agreement on Public Liability for Damage Caused by the N.S. Savannah (with annex) (6 February 1963), and the Operational Agreement on Arrangements for a Visit of the N.S. Savannah to the Netherlands (20 May 1963).

16/ I.C.J. Reports 1974, pp. 3 and 175.

II. ASSESSMENT OF ACTIVITIES FOR THEIR INJURIOUS IMPACT

55. Assessment of activities for their injurious impact refers, in this study, to a continuous procedural decision which begins prior to, but may continue during the performance of, activities with potentially injurious impact in order to prevent or minimize injuries to other States and their subjects. The content of the assessment of activities includes different stages in which a variety of interests are evaluated and accommodated and choices and changes made. Although the term "assessment of activities" has been used in this study, its procedure and content exist under other headings in many treaties, judicial decisions and official correspondence among States, though not always systematically nor step by step. The unsystematic references to the procedures and stages of the assessment of activities in treaties or judicial decisions are primarily determined by the main purposes of the treaty or by the questions posed for judicial decisions. Sometimes one or more aspects of assessment procedures may be irrelevant to a particular activity. For example, in case of prohibition of emplacement of nuclear weapons on the high seas, or the hostile use of the environmental modification techniques, the assessment procedures such as collection of data, exchange of information and consultation, etc. are totally irrelevant. The only stage of assessment which may be relevant and is stipulated in the two treaties dealing with these two activities is the monitoring step. Sometimes the procedural requirements for assessing activities for their injurious impact prior to or during their undertaking have been eliminated in agreements. States have made a policy decision that the performance of these activities is essential regardless of their harmful impact, as is apparent from most treaties dealing with shipping. The basic thrust of the treaties is to determine liability and to provide compensation for injuries these activities may cause.

Multilateral agreements

56. The implied language requiring States to assess the injurious impact of their activities is reflected in article 192 of the Convention on the Law of the Sea. It states that "States have the obligation to protect and preserve the marine environment". The language of paragraph 2 of article 194 is more express. It requires States to take "all measures" necessary to prevent damage resulting from activities under their jurisdiction or control to other States and their environment: [Para. 2 of art. 194 provides:]

> "2. States shall take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment, and that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond the areas where they exercise sovereign rights in accordance with this Convention."

57. In relation to activities concerning resource deposits in the "Area, which lies across limits of national jurisdiction, article 142 of the Convention requires the Acting State to proceed with the exploitation of the deposits, while respecting the rights and interests of the coastal State. Paragraph 1 of this article provides:

"1. Activities in the Area, with respect to resource deposits in the Area which lie across limits of national jurisdiction, shall be conducted with due regard to the rights and legitimate interests of any coastal State across whose juridiction such deposits lie." [Emphasis added.]

Indeed, part XII of the Convention elaborates on the requirements of assessing the injurious impact of activities. Sections 1 to 4 of part XII in particular deal primarily with the detailed steps of impact assessment as set forth in this study.

58. Two multilateral agreements regarding communications systems obligate their signatories to use their communications installations in ways which will not interfere with the facilities of other States parties. Article 10, paragraph 2 of the International Radiotelegraph Convention 1/ requests its parties to operate stations in such a manner as not to interfere with the radioelectric communications of other contracting States or of persons authorized by the Governments. It provides:

" 2. All stations, whatever their object may be, must, so far as possible, be established and operated in such manner as not to interfere with the radioelectric communications or services of other contracting Governments and of individual persons or private enterprises authorized by those contracting Governments to conduct a public radiocommunication service."

59. The International Telecommunications Convention provides for a similar requirement in article 35:

" 1. All stations, whatever their object may be, must, so far as possible, be established and operated in such manner as not to interfere with the radioelectric communications or services of other Contracting Governments, or of private enterprises recognised by those Contracting Governments or other duly authorised enterprised with conduct a radiocommunication service.

" 2. Each of the Contracting Governments not itself operating systems of radiocommunication undertakes to require private enterprises which it recognises and other enterprises duly authorised for that purpose to observe the provisions of 1 above."

Another communications convention prohibits broadcasting, to another State, materials to incite its population to act incompatibly with the internal order and security of the State. The International Convention concerning the use of broadcasting in the cause of peace provides, in article 1:

"The High Contracting Parties mutually undertake to prohibit and, if occasion arises, to stop without delay the broadcasting within their respective territories of any transmission which to the detriment of good

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1/ International Radiotelegraph Convention, with General Regulations and Additional Regulations (25 November 1927).

international understanding is of such a character as to incite the population of any territory to acts incompatible with the internal order or the security of a territory of a High Contracting Party."

60. Article 12 of the Convention for the Protection and Development of the Marine Environment of the Caribbean Region obligates its signatories to develop technical and other guidelines to assist them in assessing the environmental impact of their development programmes upon the area covered by the Convention. The assessment should particularly examine the effects upon coastal areas. Under this article, the contracting States shall, when requested, submit information about their development programme and its potential consequences. When appropriate, a State may consult other contracting States which may be affected by the impact of their activities. The article provides:

"Article 12

"Environmental Impact Assessment

"1. As part of their environmental management policies the Contracting Parties undertake to develop technical and other guidelines to assist the planning of their major development projects in such a way as to prevent or minimize harmful impacts on the Convention area.

"2. Each Contracting Party shall assess within its capabilities, or ensure the assessment of, the potential effects of such projects on the marine environment, particularly in coastal areas, so that appropriate measures may be taken to prevent any substantial pollution of, or significant and harmful changes to, the Convention area.

"3. With respect to the assessments referred to in paragraph 2, each Contracting Party shall, with the assistance of the Organization when requested, develop procedures for the dissemination of information and may, where appropriate, invite other Contracting Parties which may be affected to consult with it and to submit comments."

Bilateral agreements

61. Since bilateral agreements are primarily geared to a more specific use of a particular resource, their provisions, including those related to impact assessment, appear to be more specific. For example, they may simply prohibit certain specific activities. Nevertheless, these provisions are designed to protect the interests of both parties in security, economic or social matters. For example, article 3 of an agreement between Finland and the Soviet Union 2/ prohibits

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2/ Convention between the Republic of Finland and the Russian Socialist Federal Soviet Republic concerning the maintenance of river channels and the regulation of fishing on watercourses forming part of the frontier between Finland and Russia (28 October 1922).

the diversion of certain of their frontier watercourses, (a) by any construction or any steps which may cause damage, or (b) by altering the present depth or condition of the parts of a watercourse situated in the territory of the other party, thereby damaging the fairway or encroaching upon the channels used for navigation or timber-floating, unless a special agreement is made between the parties. This article prohibits not certain activities, but specific outcomes regardless of the activities themselves,

62. Occasionally, the provisions relating to impact assessment may be more general, not relating to any specific activity or outcome. Article 28 of a treaty between Hungary and Romania 3/ requires, for example, the parties not to undertake any forestry activities in the vicinity of their frontier which may impair the forest economy of the other party:

"Article 28

"1. Each Contracting Party shall so conduct its forestry operations in the vicinity of the frontier as not to impair the forest economy of the other Party."

Thus, article 1 of an agreement between the Federal Republic of Germany and Austria 4/ establishes a German-Austrian Land-Use Commission in order to facilitate co-operation in matters of land use, particularly in areas adjacent to their common frontier. 5/ Such co-operation would obviously entail consultation between the parties or through the Commission regarding land use in the frontier areas.

63. Sometimes the entire bilateral agreement may focus on the assessment of the impact of any activity which has transboundary effects. The recent Agreement

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3/ Treaty between The Government of the Hungarian People's Republic and the Government of the Romanian People's Republic concerning the régime of the Hungarian-Romanian State frontier and co-operation in frontier matters (13 June 1963).

4/ Agreement between the Government of the Federal Republic of Germany and the Austrian Federal Government concerning co-operation with respect to land use (11 December 1973).

5/ Ibid., Article I reads:

"Article I

"With a view to furthering and facilitating co-operation in matters of land use, particularly as regards areas adjacent to the common frontier, there shall be established a German-Austrian Land Use Commission (hereafter referred to as the Commission)."

between Mexico and the United States of 1983 may be cited as an example. 6/ The preamble of the Agreement recognizes the importance of a "healthful" environment to the long-term economic and social well-being of present and future generations of both countries as well as of the globe. Article 1 of the agreement indicates that co-operation among the parties is based on equality, reciprocity, and mutual benefit. It provides:

"ARTICLE 1

"The United States of America and the United Mexican States, hereinafter referred to as the Parties, agree to co-operate in the field of environmental protection in the border area on the basis of equality, reciprocity and mutual benefit. The objectives of the present Agreement are to establish the basis for co-operation between the Parties for the protection, improvement and conservation of the environment and the problems which affect it, as well as to agree on necessary measures to prevent and control pollution in the border area, and to provide the framework for development of a system of notification for emergency situations. Such objectives shall be pursued without prejudice to the co-operation which the Parties may agree to undertake outside the border area."

6/ Agreement between the United States of America and the United Mexican States on Co-operation for the Protection and Improvement of the Environment in the Border Area (14 August 1983).

64. Bilateral agreements have also been concluded for safeguarding the frontier lines to protect the security interests of the parties. An agreement between Norway and the Soviet Union 7/ requires the parties to maintain a belt 20 metres wide on either side of their frontier within which no activity for exploitation of mineral deposits may take place unless by agreement between the two States.

Judicial decisions and State practice other than agreements

65. The general requirement that States must assess the injurious impact of activities undertaken by them or by persons under their control was stated in the Trail Smelter Arbitration. The Tribunal observed that "no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein". 8/

The decision in that case established a rather precise and comprehensive régime for assessing the injurious impact of smeltering activities occurring within the acting State but causing extraterritorial injuries.

66. A more exacting requirement of State asessment of activities occurring within territorial control was stated by the Court in the Corfu Channel Case. In that case, Great Britain sought indemnity for damage to one of her ships resulting from striking a mine in the Corfu Channel. The author of the mine laying remained unknown. None the less, Albania was found responsible for assessing the damage occurring within her territorial waters:

> "From all the facts and observations mentioned above, the Court draws the conclusion that the laying of the minefield which caused the explosions on October 22nd, 1946, could not have been accomplished without the knowledge of the Albanian Government.
>
> "The obligations resulting for Albania from this knowledge are not disputed between the Parties. Counsel for the Albanian Government expressly recognized that [translation] 'if Albania had been informed of the operation before the incidents of October 22nd, and in time to warn the British vessels and shipping in general of the existence of mines in the Corfu Channel, her responsibility would be involved ...'
>
> "The obligations incumbent upon the Albanian authorities consisted of notifying, for the benefit of shipping in general, the existence of a minefield in Albanian territorial waters and in warning the approaching British warships of the imminent danger to which the minefield exposed them. Such obligations are based, not on the Hague Convention of 1907, No. VIII, which is applicable in time of war, but on certain general and well-recognized principles, namely: elementary considerations of humanity, even more exacting

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7/ Agreement between the Royal Norwegian Government and the Government of the Union of Soviet Socialist Republics concerning the régime of the Norwegian-Soviet frontier and procedure for settlement of frontier disputes and incidents (29 December 1949), art. 18.

8/ United Nations, Reports of International Arbitral Awards, vol. III, p. 1965.

in peace than in war: the principle of the freedom of maritime communication; and every State's obligation not to allow knowingly its territory to be used for acts contrary to the rights of other States." 9/

67. From the language of the decision it appears that the standard of "due care" which a State must maintain as regards activities by other international actors on its territory is at least that of a negligence standard in the assessment of injurious impact:

> "It is clear that knowledge of the minelaying cannot be imputed to the Albanian Government by reason merely of the fact that a minefield discovered in Albanian territorial waters caused the explosions of which the British warships were the victims. It is true, as international practice shows, that a State on whose territory or in whose waters an act contrary to international law has occurred, may be called upon to give an explanation. It is also true that a State cannot evade such a request by limiting itself to a reply that it is ignorant of the circumstances of the act and of its authors. The State may, up to a certain point, be bound to supply particulars of the use made by it of the means of information and inquiry at its disposal." 10/

68. The Court recognized that as a question of fact it could not be concluded that merely because a State had control over its territory and waters, the State knew or ought to have known of any wrongdoing perpetrated therein. That fact, the Court concluded, by itself and apart from other circumstances, did not prima facie involve responsibility nor did it shift the burden of proof. 10/ On the other hand, the Court recognized that the exclusive control by a State over its territory had a bearing upon the methods of proof available to establish the knowledge by the State of events. Hence, by reason of this exclusive control, the injured State was often unable to furnish direct proof of facts giving rise to responsibility. Therefore, the injured State should be allowed "a more liberal recourse to inferences of fact and circumstantial evidence". 10/ According to the Court, this form of evidence is admitted in all systems of law, and it is recognized by international law. It should further be regarded:

> "as of special weight when it is based on a series of facts linked together and leading logically to a single conclusion". 10/

Recourse to a very liberal interpretation and acceptance of evidence regarding the knowledge by the State of injurious acts carried out by other entities appears to have been recognized.

A. Data collection

69. Collecting data on the possible effect of activities with potential injuries is the first step in the impact assessment process. It requires serious

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9/ I.C.J. Reports 1949, p. 22. Emphasis added.

10/ Ibid., p. 18. Emphasis added.

consideration, in good faith, of the interests of others. This early stage of assessment includes gathering scientific information about the kind and extent of injuries which an activity may cause to other States or their subjects. Collection of data may be undertaken by the acting State alone, by a joint commission or by a group of States. Thus collection of data may be required with respect to the impact of activities on the shared domains, and to the level of possible injuries to other States and their subjects.

Multilateral agreements

70. Some multilateral agreements provide that the data may be collected by States individually. Article XI of the Kuwait Regional Convention on the Protection and Development of the Marine Environment and the Coastal Areas explicitly requires States to assess the potential injuries to the marine environment that any of their activities undertaken within their territory may cause:

"Environmental assessment

"(a) Each Contracting State shall endeavour to include an assessment of the potential environmental effects in any planning activity entailing projects within its territory, particularly in the coastal areas, which may cause significant risks of pollution in the Sea Area;

"(b) The Contracting States may, in consultation with the secretariat, develop procedures for dissemination of information of the assessment of the activities referred to in paragraph (a) above;

"(c) The Contracting States undertake to develop, individually or jointly, technical and other guidelines in accordance with standard scientific practice to assist the planning of their development projects in such a way as to minimize their harmful impact on the marine environment. In this regard international standards may be used where appropriate." [Emphasis added]

This article does not seem to be concerned about injuries to a specific State, but injuries to a designated area in the Gulf waters (Sea Area) shared among the member States.

71. The Convention on Long-Range Transboundary Air Pollution requires research and exchange of information and the examination of the impact of activities undertaken by the parties to the Convention. This Convention is primarily concerned with the prevention and minimizing of injury. It is not concerned with the question of liability. Articles 3 and 4 of the Convention provide:

"Article 3

"The Contracting Parties, within the framework of the present Convention, shall by means of exchanges of information, consultation, research and monitoring, develop without undue delay policies and strategies which shall serve as a means of combating the discharge of air pollutants, taking into account efforts already made at national and international levels.

"Article 4

"The Contracting Parties shall exchange information on and review their policies, scientific activities and technical measures aimed at combating, as far as possible, the discharge of air pollutants which may have adverse effects, thereby contributing to the reduction of air pollution including long-range transboundary air pollution."

Article 7 of the Convention deals with co-operation among member States to research and develop methods for reducing air pollution and its long-range transmission:

"Article 7

"The Contracting Parties, as appropriate to their needs, shall initiate and co-operate in the conduct of research into and/or development of:

"(a) existing and proposed technologies for reducing emissions of sulphur compounds and other major air pollutants, including technical and economic feasibility, and environmental consequences;

"(b) instrumentation and other techniques for monitoring and measuring emission rates and ambient concentrations of air pollutants;

"(c) improved models for a better understanding of the transmission of long-range transboundary air pollutants;

"(d) the effects of sulphur compounds and other major air pollutants on human health and the environment, including agriculture, forestry, materials, aquatic and other natural ecosystems and visibility, with a view to establishing a scientific basis for dose/effect relationships designed to protect the environment;

"(e) the economic, social and environmental assessment of alternative measures for attaining environmental objectives including the reduction of long-range transboundary air pollution;

"(f) education and training programmes related to the environmental aspects of pollution by sulphur compounds and other major air pollutants."

Article 8 of the Convention requires exchange of data and information on emissions at periods to be agreed by the parties, on major national policy changes in industrial development and their potential impact, and on meteorological and physico-chemical data. The article provides:

"Article 8

"The Contracting Parties, within the framework of the Executive Body referred to in article 10 and bilaterally, shall, in their common interests, exchange available information on:

"(a) data on emissions at periods of time to be agreed upon, of agreed air pollutants, starting with sulphur dioxide, coming from grid-units of agreed size; or on the fluxes of agreed air pollutants, starting with sulphur dioxide, across national borders, at distances and at periods of time to be agreed upon;

"(b) major changes in national policies and in general industrial development, and their potential impact, which would be likely to cause significant changes in long-range transboundary air pollution;

"(c) control technologies for reducing air pollution relevant to long-range transboundary air pollution;

"(d) the projected cost of the emission control of sulphur compounds and other major air pollutants on a national scale;

"(e) meteorological and physico-chemical data relating to the processes during transmission;

"(f) physico-chemical and biological data relating to the effects of long-range transboundary air pollution and the extent of the damage 11/ which these data indicate can be attributed to long-range transboundary air pollution;

"(g) national, subregional and regional policies and strategies for the control of sulphur compounds and other major air pollutants."

Paragraphs (e), (f), (g) and (h) of article 9 of the Convention again deal with data collection and exchange of information:

"(e) the need to exchange data on emissions at periods of time to be agreed upon, of agreed air pollutants, starting with sulphur dioxide, coming from grid-units of agreed size; or on the fluxes of agreed air pollutants, starting with sulphur dioxide, across national borders, at distances and at periods of time to be agreed upon. The method, including the model, used to determine the fluxes, as well as the method, including the model, used to determine the transmission of air pollutants based on the emissions per grid-unit, shall be made available and periodically reviewed, in order to improve the methods and the models;

"(f) their willingness to continue the exchange and periodic updating of national data on total emissions of agreed air pollutants, starting with sulphur dioxide;

"(g) the need to provide meteorological and physico-chemical data relating to processes during transmission;

11/ The present Convention does not contain a rule on State liability for damage.

"(h) the need to monitor chemical components in other media such as water, soil and vegetation, as well as a similar monitoring programme to record effects on health and environment;".

72. In some multilateral agreements, commissions have been established, among other things, to carry out research and collect data. Thus article III of the International Convention for Conservation of Atlantic Tunas establishes a Commission, one of the duties of which is to study the effect of human and natural factors on the abundance of tuna and tune-like fishes in the Convention areas. In undertaking such a study, the Commission is not obliged to use only government information supplied by the member States; it may conduct its own independent research studies and utilize the research conducted by and the services of private organizations or individuals. Article IV provides:

"1. In order to carry out the objectives of this Convention the Commission shall be responsible for the study of the populations of tuna and tuna-like fishes (the Scombriformes with the exception of the families Trichiuridae and Gempylidae and the genus Scomber) and such other species of fishes exploited in tuna fishing in the Convention area as are not under investigation by another international fishery organization. Such study shall include research on the abundance, biometry and ecology of the fishes; the oceanography of their environment; and the effects of natural and human factors upon their abundance. The Commission, in carrying out these responsibilities shall, insofar as feasible, utilise the technical and scientific services of, and information from, official agencies of the Contracting Parties and their political sub-divisions and may, when desirable, utilise the available services and information of any public or private institution, organization or individual, and may undertake within the limits of its budget independent research to supplement the research work being done by governments, national institutions or other international organizations.

"2. The carrying out of the provisions in paragraph 1 of this Article shall include:

"(a) collecting and analysing statistical information relating to the current conditions and trends of the tuna fishery resources of the Convention area;

"(b) studying and appraising information concerning measures and methods to ensure maintenance of the populations of tuna and tuna-like fishes in the Convention area at levels which will permit the maximum sustainable catch and which will ensure the effective exploitation of these fishes in a manner consistent with this catch;

"(c) recommending studies and investigations to the Contracting Parties;

"(d) publishing and otherwise disseminating reports of its findings and statistical, biological and other scientific information relative to the tuna fisheries of the Convention area."

Similar responsibilities have been envisaged for the Commission established under the International Convention for the Northwest Atlantic Fisheries. Article VI of the Convention provides:

"Article VI

"1. The Commission shall be responsible in the field of scientific investigation for obtaining and collating the information necessary for maintaining those stocks of fish which support international fisheries in the Convention area and the Commission may, through or in collaboration with agencies of the Contracting Governments or other public or private agencies and organization or, when necessary, independently:

"(a) make such investigations as it finds necessary into the abundance life history and ecology of any species of aquatic life in any part of the Northwest Atlantic Ocean;

"(b) collect and analyze statistical information relating to the current conditions and trends of the fishery resources of the Northwest Atlantic Ocean;

"(c) study and appraise information concerning the methods for maintaining and increasing stocks of fish in the Northwest Atlantic Ocean;

"(d) hold or arrange such hearings as may be useful or essential in connection with the development of complete factual information necessary to carry out the provisions of this Convention;

"(e) conduct fishing operations in the Convention area at any time for purposes of scientific investigation;

"(f) publish and otherwise disseminate reports of its findings and statistical, scientific and other information relating to the fisheries of the Northwest Atlantic Ocean as well as such other reports as fall within the scope of this Convention.

"2. Upon the unanimous recommendation of each Panel affected, the Commission may alter the boundaries of the sub-areas set out in the Annex. Any such alteration shall forthwith be reported to the Depositary Government which shall inform the Contracting Governments, and the sub-areas defined in the Annex shall be altered accordingly.

"3. The Contracting Governments shall furnish to the Commission, at such time and in such form as may be required by the Commission, the statistical information referred to in paragraph 1 (b) of this Article."

73. The above two fisheries Conventions have primarily dealt with the assessment of the activities of their signatories which might affect the utilization of fishing resources of a certain area of the shared domain. These resources, although in the shared domain, are economically important to the parties to the Convention. Hence, the States have voluntarily limited their unilateral activities within that domain. The extent of their co-operation under the two Conventions is limited to assessment and monitoring. Compliance with these regulations appears to be voluntary. Nevertheless, the Conventions and the compliance by its signatories with the recommendation of its Commissions have created certain expectations about the regulatory nature of the recommendations of the Commissions.

74. The treaty concerning Lake Constance also establishes a commission with the responsibility of carrying out research to determine the quality of the lake and the causes of its pollution. Article 4 of the treaty provides:

"The Commission shall:

"a) determine the quality of Lake Constance and the causes of its pollution;

"b) regularly verify the quality of the waters of Lake Constance;

"c) discuss measures for remedying existing pollution and preventing all future pollution of Lake Constance and recommend them to the riparian States;

"d) discuss measures which any riparian State proposes to take in accordance with Article 1, paragraph 3, above;

"e) study the possibility of instituting regulations to preserve Lake Constance from pollution; consider the possible content of such regulations which shall, if appropriate, form the subject of another convention between the riparian States;

"f) concern itself with all other questions relating to control of pollution of Lake Constance."

The Committee created under the Protocol between France, Belgium and Luxembourg to establish a tripartite standing committee on polluted waters, in addition to defining the polluting factors (industrial or commercial origin, degrees of intensity, etc.) shall also collect any appropriate technical opinions concerning the pollution.

75. Articles 200 and 201 of the Convention on the Law of the Sea provide that States shall undertake research and studies individually or collectively through competent international organizations to assess the nature and extent of pollution of the marine environment. The area covered for the purposes of such research and studies is referred to as the "marine environment". The purpose of research and study is to assist the States in reaching agreement on the formulation of certain rules, standards and recommended practices which would affect the utilization of the shared domain by the contracting States. Articles 200 and 201 read:

"Article 200

"Studies, research programmes and exchange of information and data

"States shall co-operate, directly or through competent international organizations, for the purpose of promoting studies, undertaking programmes of scientific research and encouraging the exchange of information and data acquired about pollution of the marine environment. They shall endeavour to participate actively in regional and global programmes to acquire knowledge for the assessment of the nature and extent of pollution, exposure to it, and its pathways, risks and remedies.

"Article 201

"Scientific criteria and regulations

"In the light of the information and data acquired pursuant to article 200, States shall co-operate, directly or through competent international organizations, in establishing appropriate scientific criteria for the formulation and elaboration of rules, standards and recommended practices and procedures for the prevention, reduction and control of pollution of the marine environment."

Bilateral agreements

76. In a number of multilateral agreements, collection and exchange of information are related to a broader range of activities. By contrast, bilateral agreements in general, due to the greater precision of their subjects, require collection and exchange of information relating to more exact types of activities using particular resources with certain results. In bilateral agreements dealing with shared waters, for example, the above requirements relate only to the use of the shared waters. The Convention concerning the Boundary Waters between the United States and Canada appears, in article III, to require an assessment of activity to be made either by Canada or the United States on boundary waters within their respective jurisdictions to ensure that such activities "do not materially affect the level or flow of the boundary waters on the other, nor are such provisions intended to interfere with the ordinary use of such waters for domestic and sanitary purposes". Thus, before undertaking any activity, one party should assess the impact of its conduct on the other. Such an assessment requires collecting and studying data and information in relation to the hazardous impact of the projects to be undertaken.

77. Norway and Sweden agreed in a Convention 12/ relating to their shared watercourses that each State may ask the other's competent authorities for information necessary to enable it to determine the effects a particular undertaking may have in the other's country. Article 16 of the Convention provides:

12/ Convention between Norway and Sweden on Certain Questions relating to the Law on Watercourses (11 May 1929).

"Requests for Information.

"Article 16.

"Each State may ask the competent authority in the other country for the information necessary to enable it to determine what effects the undertaking will produce in the former country."

Accordingly, information may be provided on the basis of the request from the potentially injured State.

78. Not all bilateral agreements deal with specific activities. The 1983 Agreement between the United States and Mexico 13/ provides in article 7 that the parties shall assess the impact of their national laws, policies and projects which may have significant impact on the environment of the border area. Article 6 of the same Agreement enumerates, among the forms of co-operation among the parties, "impact assessment", and "periodic exchanges of information and data" on the likely sources of pollution in their respective territories. Articles 6 and 7 of the Agreement provide:

"ARTICLE 6

"To implement this Agreement, the Parties shall consider and, as appropriate, pursue in a coordinated manner practical, legal, institutional and technical measures for protecting the quality of the environment in the border area. Forms of co-operation may include: coordination of national programs; scientific and educational exchanges; environmental monitoring; environmental impact assessment; and periodic exchanges of information and data on likely sources of pollution in their respective territory which may produce environmentally polluting incidents, as defined in an annex to this Agreement.

"ARTICLE 7

"The Parties shall assess, as appropriate, in accordance with their respective national laws, regulations and policies, projects that may have significant impacts on the environment of the border area, so that appropriate measures may be considered to avoid or mitigate adverse environmental effects."

To co-ordinate this process each party under article 8 of the Agreement designates a national co-ordinator with the principal function of co-ordinating and monitoring the implementation of this Agreement and making recommendations to the parties. In respect of matters to be examined jointly, the national co-ordinators may invite representatives of federal, state and municipal Governments to participate in meetings. By mutual agreement, they may also invite representatives of international governmental or non-governmental organizations which may be able

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13/ Agreement between the United States of America and the United Mexican States on Cooperation for the Protection and Improvement of the Environment in the Border Area (14 August 1983).

to contribute information on the problems. Articles 8 and 9 of the Agreement provide:

"ARTICLE 8

"Each Party designates a national coordinator whose principal functions will be to coordinate and monitor implementation of this Agreement, make recommendations to the Parties, and organize the annual meetings referred to in Article 10, and the meetings of the experts referred to in Article 11. Additional responsibilities of the national coordinators may be agreed to in an annex to this Agreement.

"In the case of the United States of America the national cooridnator shall be the Environmental Protection Agency, and in the case of Mexico it shall be the Secretaría de Desarrollo Urbano y Ecología, through the Subsecretaría de Ecología.

"ARTICLE 9

"Taking into account the subjects to be examined jointly, the national coordinators may invite, as appropriate, representatives of federal, state and municipal governments to participate in the meetings provided for in this Agreement. By mutual agreement they may also invite representatives of international governmental or non-governmental organizations who may be able to contribute some element of expertise on problems to be solved.

"The national coordinators will determine by mutual agreement the form and manner of participation of non-governmental entities."

Each contracting party, under the above treaty, is obliged to facilitate the entry of equipment and personnel related to the Agreement (supposedly for gathering information and examination of likely sources of pollution) subject to the receiving State's laws and regulations. Article 15 of the Agreement provides:

"ARTICLE 15

"The parties shall facilitate the entry of equipment and personnel related to this Agreement, subject to the laws and regulations of the receiving country.

"..."

The Agreement also provides that all the technical information obtained under it will be available to both parties and to third parties by mutual agreement of the contracting States. Article 16 provides:

"ARTICLE 16

"All technical information obtained through the implementation of this Agreement will be available to both parties. Such information may be made available to third parties by the mutual agreement of the parties to this Agreement."

79. In some bilateral agreements a joint commission provides information concerning the use of a shared resource between the parties. Article I of an agreement between Yugoslavia and Greece 14/ establishes a Permanent Yugoslav-Greek Hydro-economic Commission in order to study the hydroeconomic problems and projects jointly submitted to it by the parties. The article provides:

"Article I

"A Permanent Yugoslav-Greek Hydro-economic Commission shall be established to study the hydro-economic problems and projects jointly submitted to it by the Contracting Parties.

"The functions of the Commission shall, inter alia, include co-operation in the study of problems relating to the Vardar (Axius) River with a view to the future regulation of watercourses in the basin of that river, the regulation of streams in the border area, improvement schemes, hydro-economic problems concerning Lake Doiran and Lake Prespa, fishing in those two lakes, the exchange of hydro-meteorological data, and any other hydro-economic problems which may arise and which may be jointly referred to the permanent Commission by the Contracting States.

"The composition, functions and procedure of the Permanent Yugoslav-Greek Hydro-economic Commission shall be as laid down in the Regulations 2/ annexed to this Agreement and forming an integral part thereof."

80. Occasionally, the arrangement in bilateral agreements for the exchange of information aims at averting a danger to a State. The danger may be caused by natural phenomena in the territory of another State. In an agreement between Poland and the Soviet Union concerning their frontier area, 15/ the parties agree that their competent authorities shall exchange information concerning the level and volume of water and ice conditions on frontier waters in order to facilitate averting the dangers created by floods or floating ice. Article 19 of the Agreement provides:

"Article 19

"1. The competent authorities of the Contracting Parties shall exchange information concering the level and volume of water and ice conditions on frontier waters, if such information may help to avert the dangers created by floods or floating ice. If necessary, the said authorities shall also agree upon a regular system of signals in times of flood or floating ice. Delays in

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14/ Agreement between the Federal People's Republic of Yugoslavia and the Kingdom of Greece concerning hydroeconomic questions (18 June 1959).

15/ Agreement between the Government of the Polish Republic and the Government of the Union of Soviet Socialist Republics concerning the régime of the Soviet-Polish State frontier (8 July 1948).

communicating or failure to communicate such information may not constitute grounds for claiming compensation in respect of damage caused by flood or floating ice."

81. It should be noted that, according to the above article, delays or failure to communicate such information may not constitute grounds for claiming compensation in respect of damage by flood or floating ice. An identical provision is incorporated in an agreement between the Soviet Union and Hungary. 16/ Article 19 of this Agreement similarly provides:

"Article 19. The competent authorities of the Contracting Parties shall exchange information concerning the level of rivers with which the Contracting Parties are concerned, and concerning ice conditions in such rivers, if this information may help to avert danger from floods or from drifting ice. The said authorities shall also agree upon a regular system of signals to be used during periods of high water or drifting ice. Delay in communicating, or failure to communicate, such information shall not constitute ground for a claim to compensation for damage caused by flooding or drifting ice."

Article 3 of an agreement between Bulgaria and Turkey 17/ provides for exchange of information between the parties concerning the floods and floating ice as quickly as possible. Furthermore, the parties agreed to exchange hydrological and meteorological data concerning their frontier rivers. The article reads:

"Article 3

"The two Contracting Parties agreed to exchange information concerning floods and floating ice by the most expeditious means possible.

"In addition, the Contracting Parties agree to exchange hydrological and meteorological data concerning the rivers which flow through the territory of both countries."

82. Bilateral agreements dealing with activities involving nuclear materials appear to be more precise, with more regulatory provisions regarding the collection of data and exchange of information. For example, article 2 of a Convention between France and Belgium concerning the establishment of a nuclear power station 18/ requires the parties to inform each other, by "all appropriate means",

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16/ Treaty between the Government of the Union of Soviet Socialist Republics and the Government of the Hungarian People's Republic concerning the régime of the Soviet-Hungarian State frontier and Final Protocol (24 February 1950).

17/ Agreement between the People's Republic of Bulgaria and the Republic of Turkey concerning co-operation in the use of the waters of rivers flowing through the territory of both countries (23 October 1968).

18/ Convention between Belgium and France on Radiological Protection with regard to the Installations of the Ardennes Nuclear Power Station (23 September 1966).

regarding the studies carried out before the installations are put into service, during the operation of the station and also of the occurrence of anything in the station which might affect public health. This provision combines two stages of impact assessment: collection of data and exchange of information prior to the installation of the nuclear plant and monitoring it during its operation. The article provides:

"Article 2

"The Contracting Parties undertake to keep each other informed, by all appropriate means, regarding the studies carried out before the installations are put into service, the operation of the installations and the occurrence there of anything which might affect public health."

The company installing the station is a joint-stock company between France and Belgium. The station is installed in France near its frontier with Belgium. It is not quite clear from the agreement whether the joint co-operation between the States results from their partnership in the company installing the station or from the closeness of the station to the Belgian frontier.

83. The requirement of the collection and the exchange of information becomes even more necessary and detailed once the activity involving the use of nuclear materials is carried out by the acting State in the territory of the potentially injured State. In such situations the collection and the exchange of information is to demonstrate that the activity has met the safety measures and standards accepted between the parties or by the international community. For example, the United States, in an agreement with Italy 19/ regarding the entrance and passage of the N.S. Savannah, the United States nuclear ship, to and from Italian ports, has agreed to submit to the Italian Government the safety report prepared in accordance with the 1960 Convention on the Safety of Life at Sea, in order to enable the latter to give approval for the entry of the N.S. Savannah. Article II of the Agreement provides:

"Safety Report

"(a) To enable the Italian Government to give its approval for the entry of the Ship into Italian ports and the use thereof, the Goverment of the United States shall submit a Safety Report prepared in accordance with Regulation 7 of Chapter VIII of the 1960 Convention on the Safety of Life at Sea and in accordance with Recommendation 9 of Annex C mentioned above."

19/ Agreement between the Government of the United States of America and the Government of Italy on the Use of Italian Ports by the N.S. Savannah (23 November 1964).

A similar provision exists in an agreement between the United States and the Netherlands concerning the entry of the N.S. Savannah to the ports of the Netherlands. 20/

20/ Operational Agreements on Arrangements for a visit of the N.S. Savannah to the Netherlands (20 May 1963). Articles 7 to 9 of the Agreement provide:

"Safety Assessment and Operation Manual

"Article 7

"To enable the Netherlands Government to decide whether or not approval shall be given for the Ship's entry into Netherlands waters and the Ship's use of the port area of Rotterdam, the Government of the United States shall provide a Safety Assessment prepared in accordance with Regulation 7 of Chapter VIII of the International Convention for the Safety of Life at Sea, 1960, and in accordance with Recommendation 9 of Annex C to the Final Act of the International Conference on Safety of Life at Sea, 1960.

"Article 8

"As soon after receipt of the Safety Assessment as is practicable the Netherlands Government shall notify the Government of the United States of its decision as to the acceptance of the Ship.

"Article 9

"An Operating Manual prepared in accordance with Regulation 8 of Chapter VIII of the International Convention for the Safety of Life at Sea, 1960, and with Recommendation 8 of Annex C to the Final Act of the International Conference on Safety of Life at Sea, 1960, shall be kept on board the Ship and shall be kept up to date."

Judicial decisions and State practice other than agreements

84. This early stage of consideration of the interests of others has been explicitly recognized and referred to in some judicial decisions, diplomatic correspondence and State interactions. Sometimes assessments have been made unilaterally. For example, the United States made a unilateral determination to collect data prior to instituting nuclear tests to determine which area of the ocean would be the least likely to cause injuries to other international interests:

> "Eniwetok Atoll was selected as the site for the proving grounds after the careful consideration of all available Pacific Islands. Bikini is not suitable as the site since it lacks sufficient land surface for the instrumentation necessary to the scientific observations which must be made. Of other possible sites, Eniwetok has the fewest inhabitants to be cared for, approximately 145, and, what is more important from a radiological standpoint, it is isolated and there are hundreds of miles of open seas in the direction in which winds might carry radioactive particles.
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> "Construction will be supported through the Hawaiian Islands, Johnston Island and Kwajalein Island.
>
> "The permanent transfer elsewhere of the Island people now living in Aomon and Biijiri Islands in Eniwetok Atoll will be necessary. They are not now living in their original ancestral homes but in temporary structures provided for them on the two foregoing Islands to which they were moved by United States Forces during the war in the Pacific, after they had scattered throughout the Atoll to avoid being pressed into labor service by the Japanese and for protection against military operations. The sites for the new homes of the local inhabitants will be selected by them. The inhabitants concerned will be reimbursed for lands utilized and will be given every assistance and care in their move to, and re-establishment at their new location. Measures will be taken to insure that none of the inhabitants of the area are subject to danger; also that those few inhabitants who will move will undergo the minimum of inconvenience." 21/

85. The assessment was claimed to have been designed to minimize injury to the interests of other international actors:

> "Protection of health and safety is a primary consideration in the conduct of the HARDTACK series of nuclear weapons at the Eniwetok Proving Ground in the Pacific.
>
> "As announced previously, the test series will advance the development of weapons for defense against aggression whether airborne, missile-borne or otherwise mounted. Information on the effects of weapons will be obtained for military and civilian defense use. As in the past, test operations will be conducted in a manner designed to keep to as low as possible the public exposure to radiation arising from the detonation of nuclear weapons.

21/ M. Whiteman, Digest of International Law, vol. 4, p. 588.

"An important objective of the tests is the further development of nuclear weapons with greatly reduced radioactive fallout in that the area of radiation hazard may be kept as small as possible. This principle was first proved in the Eniwetok test series of 1956.

"Various precautions have been taken to keep significant radioactive fallout within the confines of the danger area in the Pacific which was announced on February 14, 1958. With the exception of Joint Task Force facilities, there are no inhabited places within the danger area.

"Extensive systems have been established to detect and measure radioactivity in the vicinity of the Proving Ground, in the United States, and in other parts of the world. Radiological monitoring and sampling will be conducted by several networks of stations extending from the Proving Ground to locations around the world. In addition marine surveys will be conducted to measure radioactivity in sea water and marine organisms." 22/

86. Attempts were made by the United States to predict fall-out based on weather patterns and meteorological models:

"Fallout Predictions

"Tests will be conducted only when the forecast partern of significant fallout is entirely within the danger area. In forecasting fallout patterns, scientists will make use of improved methods of collecting and evaluating data which have been developed as a result of intensive study of the problem of predicting fallout in the vicinity of the Proving Ground.

"Fallout predictions are dependent upon weather information. Experience has shown that weather data normally available in the Pacific Ocean area are inadequte for the needs of testing. Therefore for nuclear tests in the Pacific special arrangements are made to obtain additional data. For the 1958 tests thirteen special United States weather stations, located within several hundred miles of the Proving Ground, will participate in a weather network reporting to a central station. These stations will be staffed by military and civilian meteorologists. Weather reconnaissance will be carried on employing aircraft, ships, balloons and rockets.

"Research has been conducted in the special field of tropical meteorology, and weather observers and forecasters have been instructed in the latest methods of forecasting which have been developed as a result of these studies.

22/ Whiteman, op. cit., vol. 4, p. 588.

"Trained personnel have been organized into a fallout prediction unit. To assist in predicting fallout patterns they will utilize fallout computers which mechanize most of the mathematical procedures involved. Use of the computers will make possible rapid forecasts. Models of the clouds produced by previous large-scale nuclear detonations have been developed, and these also are expected to improve fallout predictions." 23/

87. In addition, a danger area was declared based on information regarding the width of the fall-out area and the inhabitants therein:

"Danger Area

"The danger area is generally rectangular in shape and comprises roughly 390,000 square nautical miles. It is approximately the same size as the area used in the 1956 test series, but its east and west boundaries have been shifted approximately 120 nautical miles to the west. Except for the test personnel, there are no inhabitants within the area.

"All ships, aircraft and personnel have been cautioned to remain clear of the area which is bounded by a line joining the following geographic coordinates:

18°30' N., 156°00' E.
18°30' N., 170°00' E.
11°30' N., 170°00' E.
11°30' N., 166°16' E.
10°15' N., 166°16' E.
10°15' N., 156°00' E.

"Notices have been given the widest possible distribution through marine, aviation and international organizations.

"Regular air and sea searches of the area will be conducted in advance of the start of operations. Before each shot, the patrol of the danger area will be intensified, particularly in the area where fallout is forecast.

"The Atomic Energy Commission has issued regulations which prohibit entry into the danger area of U.S. citizens and all other persons subject to the jurisdiction of the United States, its territories and possessions.

"The regulations effective from April 11, 1958 until the HARDTACK test series is completed prohibit entry, attempted entry or conspiracy to enter the danger area." 24/

23/ Ibid., pp. 588-589.

24/ Ibid., p. 589.

88. It appears that the United States Atomic Energy Commission and the Department of Defense were investigating and making predictions on the effects of radiation. It is unclear whether United States or foreign private scientific institutions were permitted to participate in any form in those investigations and predictions. Due to the nature of the activity and the particular security interest of the United States Government in maintaining exclusive control over the area where the test was to be concluded, the collection of data by private or foreign government agencies was virtually impossible. 25/

89. According to the United States and on the basis of data analysed using scientific methods, no significant fall-out or radioactivity was predicted in inhabited areas:

"Radiation Monitoring in Proving Ground Region

"Radiological safety personnel, equipped with radiation detection and measuring instruments and two-way radios to enable them to communicate with the central Task Force Radiological Safety Office, will be stationed on nearby inhabited atolls, and at weather stations of the weather reporting network. In the unlikely event of significant fallout in an inhabited area, the monitors would warn the inhabitants and advise and assist them in taking safety measures. The monitors also have trained Marshallese medical practitioners and health aides in basic emergency measures.

"Radiation Surveys of Sea and Marine Life

"Outside of the testing area, the detonations are not expected to add enough radioactive material to natural levels of radioactivity in the ocean to be harmful to marine life. Experience shows that outside the testing area, resulting quantities of radioactivity in edible sea foods will result in exposures which will be very small compared with the limits for public exposure recommended by the United States National Committee for Radiation Protection and Measurement.

25/ Normally, when a danger area was created no one was permitted to enter the area unless with the permission of the Atomic Energy Commission or the Department of Defense. For example, the April 12, 1958 regulations of the United States Atomic Energy Commission (dated April 9, 1958), which were published in the Federal Register with respect to "Eniwetok Nuclear Test Series, 1958", provided in sect. 112.4:

"No United States citizen or other person who is within the scope of this port shall enter, attempt to enter or conspire to enter the danger area during the continuation of the HARDTACK test series, except with the express approval of appropriate officials of the Atomic Energy Commission or the Department of Defense."

"As in the past there will be a program of study to explore the ultimate destination and behavior of radioactivity in the sea water and in marine organisms. Sweeps by U.S. Navy Vessels both during and after the test series will include such measures as taking continuous readings of radioactivity in surface water, sampling of water at various depths, making tows to gather plankton - the tiny marine organisms which tend to concentrate radioactive materials in their tissues - and catching of fish for analysis for radioactivity.

"In addition to these investigations, land and marine biological surveys again will be conducted at Eniwetok and Bikini and other atolls nearby. Samples of water and of plants and animals living in the lagoons and on the reefs and islands of the atolls will be collected and analyzed for radioactivity.

"Fallout Monitoring in United States

"The heavier particles fall out of the radioactive cloud at early times after a detonation, while their radioactivity is still high. Therefore, the highest levels of radioactivity occur over a local area downwind from the point of detonation. The area of significant fallout is expected to occur entirely within the uninhabited danger area surrounding the Eniwetok Proving Ground.

"As the radioactive cloud is transported away from the point of detonation, it is widely dispersed by air currents and diluted by normal air. Its radioactivity also decreases rapidly because of the normal process of radioactive decay. [Radioactive fall-out consists of a mixture of radioisotopes, with varying half-lives. The mixture as a whole decreases in radioactivity in such a way that for every seven fold increase in age, the total radioactivity is decreased 10-fold. Thus, the radioactivity at seven hours after H+1 hour is only one-tenth that at H+1 hour, and in 49 hours is one-hundredth, etc.] By the time the cloud from a detonation in the Eniwetok Proving Ground has traveled across a vast expanse of ocean, it will have become thoroughly dispersed into the air and will have lost most of its original radioactivity.

"As a result, the exposures to radioactivity in the United States from the Eniwetok tests are expected to be low. Although levels of many times the normal background may be reached in some localities, these increases will be temporary and will not greatly increase the total exposure to radiation. Average exposure of residents of the United States to radiation from weapons tests during the past five years has been much less than the average exposure to radiation from natural sources during the same period." 26/

26/ Whiteman, op. cit., vol. 4, pp. 589-591.

90. The same types of predictions were made by the British based on scientific, geographical and meteorological information on hand, unilaterally:

> "The tests will be high air bursts which will not involve heavy fall-out. Extensive safety precautions have been taken. A danger area has been declared for the period 1st March to 1st August and all shipping and aircraft have been warned to keep clear of this area. The warning has been issued far in advance so that people should be clearly aware of the position. No permanently inhabited island lies within the danger area. Weather stations, weather ships and meteorological reconnaissance flights by aircraft will provide continuous meteorological information during the period of the tests. Provided persons stay outside the danger area they have nothing to fear. The temporary use of areas outside territorial waters for gunnery or bombing practice has, as such, never been considered a violation of the principles of freedom of navigation on the high seas. The present site has been carefully chosen because it lies far from inhabited islands and avoids as far as possible shipping and air routes. It is incidentally some 4,000 miles from Japan." 27/

91. As to the effect of the radiation on health, the British Government asked an independent committee under the auspices of the Medical Research Council to examine the matter:

> "As regards the general effects of radio activity resulting from nuclear test explosions I am to state that before proceeding with their plans to develop and test weapons in the megaton range, Her Majesty's Government went most carefully into the question of potential hazards to health and asked an independent committee under the auspices of the Medical Research Council to examine the subject.
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> "The Medical Research Council's report 'The Hazards to Man of Nuclear and Allied Radiations' which was compiled by the leading authorities in the United Kingdom on this subject was published in June, 1956. The Prime Minister, Mr. Macmillan, told the House of Commons on 5th March:-
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> > "'I understand that the Medical Research Council have no evidence that the amount of strontium-90 and other radioactive particles released by hydrogen bomb explosions which may become sources of internal radiation has reached a potentially dangerous level. The present and foreseeable hazards, including genetic effects, from the external radiation due to fall-out from the explosions of nuclear weapons fired at the present rate and in the present proportion of the different kinds, are considered to be negligible; accordingly I am not prepared to postpone the forthcoming test in the Pacific.'

27/ Ibid., p. 597.

"This statement was based on up-to-date advice from the Medical Research Council and the British Prime Minster, in reply to a further question in the House of Commons on 12th March, stated that the Medical Research Council was keeping the hazards to man from all sources of radiation under continuous review;" 28/

92. Although it seems that States give priority to their own security interest in comparison with the interests of other States, at least in two instances of H-bomb tests, the acting States have made efforts to collect data and make them public about the effect of their activities and to demonstrate that they have given some attention to the interests of other States. Such a gathering of information, of course, was done unilaterally by the acting States themselves.

93. The potentially injured State has also taken the initiative in suggesting that data be collected or studies be made prior to initiation of an activity. The United States, in correspondence with Mexico concerning highway construction which the United States concluded could result in unnatural accumulation of waters and cause injury to United States citizens and their properties in the event of heavy rains, made the suggestion to study the situation and develop remedial plans:

"In view of the aforedescribed situation, I will appreciate an examination of the problem by your Section, and, if the conditions found are as reported to me, that appropriate arrangements be made with the proper authorities in Mexico to take such remedial measures as required to eliminate this threat to interests in my country." (MS. Department of State, file 611.12311/5-2057.)

"For 2 years thereafter, the United States Section of the Commission acted in this matter exclusively in an engineering advisory capacity to the Department of State and the American Consulate at Mexicali in their informal discussion of the projects and safety precautions considered essential with officials of the State Government of Baja California who were connected with the projects above described. In discussions with officials and engineers of the State Government of Baja California, United States engineers sought to avoid any implication that the State Government was obligated to obtain United States consent or approval of the U.S. Section of the International Boundary and Water Commission for its specific construction plans, and that in passing on them, the United States engineers were representing the views of their Government. A plan for culverts which was considered inadequate by United States engineers was finally abandoned by the State Government. A new set of plans drawn up by the State Government was sent to the American Consulate at Mexicali which, in turn, forwarded the plans to the United States Section of the Commission for a statement of its views. The United States Section replied that the plans appeared adequate with certain suggested modifications which were transmitted in a letter addressed to the Chief of the Department of

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28/ Ibid., p. 599.

Highways and Communications of Baja California (Rendon) by the United States Consul at Mexicali (M. W. Boyd) on October 24, 1958 (611.12311/10-2458)." 29/

94. The potentially injured State may suggest the study and collection of data to be made by a joint commission as was suggested to Mexico by the United States during the Rose Canal discussions:

"The present unfortunate situation appears to have developed from the expansion of the City of Agua Prieta toward and beyond the flood arroyo. With the simultaneous expansion of the city of Douglas, the existing drainage canals have become inadequate and represent a matter of concern to both cities. As a consequence the International Boundary and Water Commission undertook informal studies and surveys in 1949 and 1950, and the results suggest the desirability of constructing new flood control works in each of our two countries.

"My Government agrees that the International Boundary and Water Commission should continue its studies with the intention of bringing them to a conclusion and of submitting a joint report as early as possible in this year. This report might include recommendations not only concerning remedial measures but also with respect to an equitable division of costs between our Governments ..." 30/

95. Where the activity is in the nature of protective measures, such as flood control in light of imminent rains, the acting State may be reluctant to postpone development for the collection of data. The acting State may conclude that the need for the protective works outweighs the present obligation of impact assessment and may postpone that assessment. The acting State nevertheless informs the other State of activities which it intends to undertake. That procedure was followed by Mexico when it found itself compelled to take the necessary measures to avoid flooding:

"Study of the new protective works has been practically at a standstill for the last two years, owing to the fact that the United States Section has declared that it must first carry out a series of investigations and make topographical studies.

"My Government sincerely desires to reach an agreement with Your Excellency's Government on this question, but in view of the damage which the lack of a solution is causing the city of Agua Prieta and the fact that the rainy season is approaching, the Government of Mexico finds itself compelled to take the necessary measures sufficiently in advance, so that the floods may not be repeated this year. Consequently, the Mexican authorities will, on May 1 next, begin building certain protective works to prevent the entry into Agua Prieta of rain water collected by the Rose Street canal in Douglas.

29/ Ibid., p. 597.

30/ Ibid., p. 264. Emphasis added.

"I take the liberty of bringing the foregoing to Your Excellency's attention to the end that the proper authorities of your Government may take such measures as they consider advisable to prevent consequences which the return of such water might have in the city of Douglas." 30/

96. The Trail Smelter award briefly described and highly commended the comprehensive and long-term experiments and collections of data analysed in developing a permanent régime fulfilling the duty of care required of a Canadian smelter. The tests were carried out over a period of three years under the supervision of what the Tribunal called "well-established and known scientists" in chemistry, plant physiology, meteorology and the like, for the purpose of collecting data about the pollution caused by the smelter plant and the damage to United States interests. In the opinion of the Tribunal, the Study was "probably the most thorough ... [one] ever made of any area subject to atmospheric pollution by industrial smoke". 31/ Some of the factors were used for the first time in evaluating smoke control. The methods successfully used in testing eventually became embodied in the régime adopted by the Tribunal:

"The foregoing paragraphs are the result of an extended investigation of meteorological and other conditions which have been found to be of significance in smoke behaviour and control in the Trail area. The attempt made to solve the sulphur dioxide problem presented to the Tribunal has finally found expression in a régime which is now prescribed as a measure of control.

"The investigations made during the past three years on the application of meteorological observations to the solution of this problem at Trail have built up a fund of significant and important facts. This is probably the most thorough study ever made of any area subject to atmospheric pollution by industrial smoke. Some factors, such as atmospheric turbulence and the movement of the upper air currents have been applied for the first time to the question of smoke control. All factors of possible significance, including wind directions and velocity, atmospheric temperatures, lapse rates, turbulence, geostrophic winds, barometric pressures, sunlight and humidity, along with atmospheric sulphur dioxide concentrations, have been studied. As said above, many observations have been made on the movements and sulphur dioxide concentrations of the air at higher levels by means of pilot and captive balloons and by airplane, by night and by day. Progress has been made in breaking up the long winter fumigations and in reducing their intensity. In carrying finally over to the non-growing season with a few minor modifications a régime of demonstrated efficiency for the growing season, there is a sound basis for confidence that the winter fumigations will be kept under control at a level well below the threshold of possible injury to vegetation. Likewise, for the growing season a régime has been formulated which should throttle at the source the expected diurnal fumigations to a point where they will not yield concentrations below the international boundary sufficient to cause injury to plant life. This is a goal which this Tribunal has set out to accomplish." 32/

31/ United Nations, Reports of International Arbitral Awards, vol. III, p. 1973.

32/ Ibid., pp. 1973-1974.

B. Prior negotiation and consultation

97. Negotiation and consultation with the potentially injured State prior to the commencement or during the performance of activities may be for exchange of scientific data on the projects, for considering the views of the injured State and those of the acting State regarding the potential transboundary effects of activities, or for soliciting the consent of the injured State regarding the undertaking of activities with whatever consequences they may have. Prior negotiation and consultation may be on a variety of subjects, such as the nature of the injury (material, non-material, potential) and who decides what constitutes harm and in accordance with what criteria and procedure. Thus, prior negotiation is a procedure by which parties may agree upon the resolution of their conflicting interests.

98. Furthermore, paragraph 1 of Article 33 of the United Nations Charter recognizes negotiation and conciliation as preferable means of conflict resolution among States. Under this Article, States which are parties to any dispute "the continuance of which is likely to endanger the maintenance of international peace and security, shall, first of all, seek a solution by negotiation, enquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements, or other peaceful means of their own choice". This is not to claim that all disputes relating to activities with extraterritorial injurious consequences are likely to threaten international peace and security. The point is that negotiation has been recognized as an important first step in peacefully reconciling conflicting interests.

Multilateral agreements

99. A more general requirement of prior consultation is embodied in article 5 of the Convention on Long-range Transboundary Air Pollution, which provides:

"Article 5

> "Consultations shall be held, upon request, at an early stage between, on the one hand, Contracting Parties which are actually affected by or exposed to a significant risk of long-range transboundary air pollution and, on the other hand, Contracting Parties within which and subject to whose jurisdiction a significant contribution to long-range transboundary air pollution originates, or could originate, in connexion with activities carried on or contemplated therein."

Under this article, consultation shall take place "upon request" by either the acting or the potentially injured State, when there is a "significant" risk of air pollution. The word "significant" has not been defined; it will presumably be decided between the States involved. The reference to the acting State in this article is also significant. It imposes the obligation of consultation equally upon the State under whose jurisdiction the injurious activity has taken place and the State under whose jurisdiction the injurious activity "could" take place. Thus reasonable grounds for causality may be sufficient.

100. The Convention for the Prevention of Marine Pollution from Land-based Sources has used equally broad language. It provides for consultation upon request of either the acting or the injured State when the activity of the acting State is "likely to prejudice the interests" of the other State. Article 9, paragraph 1, provides:

> "When pollution from land-based sources originating from the territory of a Contracting Party by substances not listed in Part I of Annex A of the present Convention is likely to prejudice the interests of one or more of the other Parties to the Convention, the Contracting Parties concerned undertake to enter into consultation, at the request of any one of them, with a view to negotiating a cooperation agreement."

101. Under the Convention on the Law of the Sea the State involved in exploitation of mineral deposits of the sea-bed across limits of national jurisdiction of a coastal State has to consult that State and maintain a system of prior notification. Paragraph 2 of article 142 of the Convention provides:

> "2. Consultations, including a system of prior notification, shall be maintained with the State concerned, with a view to avoiding infringement of such rights and interests. In cases where activities in the Area may result in the exploitation of resources lying within national jurisdiction, the prior consent of the coastal State concerned shall be required."

The requirement of maintaing a system of prior notification appears to refer to a more systematic and rather institutionalized form of prior notification. Thus article 206 of the Convention requires notification by the acting State when it has reasonable grounds for believing that activities to be undertaken in its jurisdiction may cause injuries to others. That notification should be in accordance with the procedures stipulated in article 205:

> "Article 205
>
> "Publication of reports
>
> "States shall publish reports of the results obtained pursuant to article 204 or provide such reports at appropriate intervals to the competent international organizations, which should make them available to all States."

102. Even in relation to activities for self-help, the acting State may be required to consult the injured States. For example, article III of the International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties requires a coastal State, before taking any measures, to consult with other States affected by the maritime casualty, particularly with the flag State, and notify the measures which it intends to take. The coastal State may also, according to article III, consult with independent experts before any measure is taken. Relevant paragraphs of article III provide:

"When a coastal State is exercising the right to take measures in accordance with Article I, the following provisions shall apply:

"(a) before taking any measures, a coastal State shall proceed to consultations with other States affected by the maritime casualty, particularly with the flag State or States;

"(b) the coastal State shall notify without delay the proposed measures to any persons physical or corporate known to the coastal State, or made known to it during the consultations, to have interest which can reasonably be expected to be affected by those measures. The coastal State shall take into account any views they may submit;

"(c) before any measure is taken, the coastal State may proceed to a consultation with independent experts, whose names shall be chosen from a list maintained by the Organization;

"...

"...

"(f) measures which have been taken in application of Article I shall be notified without delay to the States and to the known physical or corporate persons concerned, as well as to the Secretary-General of the Organization."

103. Article 12 of the Convention for the Protection and Development of the Environment of the Wider Caribbean Region provides that, when appropriate, contracting States may consult other States which may be affected by their activities. The requirement of prior negotiation and consultation in this Convention is not obligatory; it appears to have been based on the spirit of co-operation. This article provides:

"Article 12

"...

"3. With respect to the assessments inferred to in paragraph 2, each Contracting Party shall, with the assistance of the Organization when requested, develop procedures for the dissemination of information and, may where appropriate, invite other Contracting Parties which may be affected to consult with it and to submit comments." [Emphasis added.]

Bilateral agreements

104. In bilateral agreements, consultation and prior negotiation appear to have been envisaged on the basis of, among other things, the spirit of co-operation between neighbouring States, or on the basis of their uncertainty as to the legal effects of their conduct if it causes extraterritorial injuries. The Agreement between Canada and the United States of America Relating to the Exchange of

Information on Weather Modification Activities combines the two above elements. The preamble of the Agreements states that because of the geographic proximity between the two States, the effects of weather modification activities carried by either party or its nationals may affect the territory of the other. 33/ It states that a prompt exchange of information regarding the nature and the extent of weather modification activities may facilitate development of the technology of weather modification. 34/ Thus the preamble refers to the "traditions" of prior notification and consultation and the close co-operation between the two States. 35/ Finally, the preamble stresses the "desirability of the development of international law relating to weather modification activities having transboundary effects". [Emphasis added.] Article II of the Agreement requires the responsible agencies of the contracting parties to transmit information relating to weather modification activities of mutual interest. Such information, whenever possible, shall be transmitted prior to the commencement of the activities. The article anticipates that such information will be transmitted within five working days of its receipt by a responsible agency. Article II, paragraph 1, provides:

> "Information relating to weather modification activities of mutual interest acquired by a responsible agency through its reporting requirements or otherwise, shall be transmitted as soon as practicable to the responsible agency of the other Party. Whenever possible, this information shall be transmitted prior to the commencement of such activities. It is anticipated that such information will be transmitted within five working days of its receipt by a responsible agency."

Each contracting party agrees, under article IV of the Agreement, to notify and to fully inform the other of any weather modification activity of mutual interest prior to the commencement of such activities. Thus every effort shall be made to provide such notice as far in advance of such activities as possible. The article provides:

33/ The relevant paragraph of the preamble provides:

"Aware, because of their geographic proximity, that the effects of weather modification activities carried out by either Party or its nationals may affect the territory of the other;".

34/ The relevant paragraph of the preamble provides:

"Believing that a prompt exchange of pertinent information regarding the nature and extent of weather modification activities of mutual interest may facilitate the development of the technology of weather modification for their mutual benefit;".

35/ The relevant paragraph of the preamble provides:

"Taking into particular consideration the special traditions of prior notification and consultation and the close co-operation that have historically characterized their relations;".

"ARTICLE IV

"In addition to the exchange of information pursuant to Article II of this Agreement, each Party agrees to notify and to fully inform the other concerning any weather modification activities of mutual interest conducted by it prior to the commencement of such activities. Every effort shall be made to provide such notice as far in advance of such activities as may be possible, bearing in mind the provisions of Article V of this Agreement." [Emphasis added.]

Under article V of the Agreement the parties agree to consult each other on weather modification activities in the light of their domestic laws and administrative regulations. The article provides:

"ARTICLE V

"The Parties agree to consult, at the request of either Party, regarding particular weather modification activities of mutual interest. Such consultations shall be initiated promptly on the request of a Party, and in cases of urgency may be undertaken through telephonic or other rapid means of communication. Consultations shall be carried out in the light of the Parties' laws, regulations, and administrative practices regarding weather modification."

105. An elaborate procedure for notification prior to an undertaking is provided in the German-Danish frontier water Agreement. 36/ It establishes a frontier water Commission to deal with all the questions relating to certain sections of frontier waters between Denmark and Germany. Because of the structure and the authority of the Commission, individual nationals, as well as the relevant districts and counties of both countries, can negotiate with each other through the Commission or may negotiate with the Commission itself. Accordingly any establishment of new, or extensive alternation of existing works on any parts of the frontier waters mentioned in the Agreement should be approved by the Commission. When there are such establishments and changes, there should be a public notification under article 30, to which the attention of all persons who may clearly suffer damage from the activity shall be drawn by means of registered letters. Hence, the requirement of direct notification is limited to persons who will clearly suffer damage. Nevertheless, there is a public notification of the activity. The relevant paragraphs of article 30 read:

"The proposed use of the watercourse shall be brought to the notice of the public in the manner which is customary in the locality in all Communes or manorial districts (Gutsbezirke), the land of which might be affected by the operation of the works in the event of their being authorized.

36/ Agreement for the Settlement of Questions Relating to Watercourses and Dikes on the German-Danish Frontier (10 April 1922).

"Further, the attention of all persons who will clearly suffer damage from the authorisation of the works shall be drawn to the public notification by means of registered letters." [Emphasis added.]

The notifaction describes the authorized activity and names the authorities to which objections may be made or requests for taking preventive measures submitted, etc. A time-limit of between two to six weeks may be fixed for lodging objections. Article 31 of the Agreement provides the detailed requirements of the content of the notification as well as the appeal procedure by individual claimants:

"Notifications shall state where the drawings and explanations which have been submitted may be inspected, and shall mention the authorities to which objections to the authorisation and also applications for the erection and upkeep of installations for the prevention of damage, or applications for compensation shall be addressed in writing or be made orally in official form. A time limit shall also be fixed for lodging objections or making applications. The period allowed shall be not less than two, and not more than six weeks. It shall begin to run from the day following that upon which the gazette containing the final notification is published.

"It shall be stated in the notification that all persons who have not lodged any objection or made any application within the time limit fixed shall lose their rights in that connection, but that applications for the erection and upkeep of installations or for compensation may be made at a later date if they are based upon damage which could not be foreseen during the period covered by the time limit.

"Even after the expiration of the appointed time a person who has suffered damage shall not be debarred from submitting a claim provided he can show that he was prevented by circumstances over which he had no control from submitting such claim within the time limit.

"The right of establishing claims after the expiration of the appointed time is subject to prescription three years after the date on which the person who suffered damage learned of the existence of such damage.

"The same time limit shall also be fixed in the notification for other applications for the authorisation of a particular use of the watercourse by which the use proposed by the first applicant would be restricted. It shall also be made clear that applications of this kind made after the expiration of the appointed time in connection with the same matter will not be taken into consideration.

"A suitable additional period may be allowed for the production of evidence."

106. An elaborate procedure for prior consultation and negotiation has been provided for in article 3 of chapter I of the Agreement between Romania and

Yugoslavia concerning their frontier waters. 37/ Under this article, if either party intends to make any alterations or changes in its own territory which might affect the hydraulic system in the basin, it shall inform the other State by registered letter with notification of receipt. This is the first step to reach an agreement with the other State about the proposed changes. Such proposed changes may not be carried out without reaching an agreement with the other State. But if the other State does not acknowledge receipt of or make any observation within two and a half months from the date of the communication, the acting State may proceed with its activity without any further formalities. In case the parties are unable to reach an agreement within a reasonable period, a different procedure is envisaged by the Agreement, which does not define this period. Article 3 of chapter I provides:

"Article 3

"Should either State propose to make any alterations or take any measures or undertake any works in its own territory such as might change to an appreciable extent the hydraulic system in the basins mentioned in Article I above, it shall, by registered letter with notification of receipt send to the other State notice of its intentions, together with a summarised description of such works, alterations or measures, with a view to the preliminary establishment of the agreement provided for by Article 292 of the Treaty of Trianon.

"Such communication shall be confirmed within a period of 15 days.

"If within two and a half months from the date of the communication the latter State has neither acknowledged receipt nor made any observations, the proposed alterations, measures or works may be undertaken without further formalities.

"In the contrary event, the proposed alterations, measures or works may not be carried out until agreement has been reached between the two States.

"If agreement is not reached within a reasonable period, action shall be taken in accordance with Arcile 6 of the Regulations of the C.R.E.D." [Emphasis added.]

107. A procedure for consultation between two States regarding the activities of private entities of one of them with potential injuries to the other has been provided for in an agreement between Norway and Sweden. 38/ Article 14 of this

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37/ General Convention concerning the hydraulic system concluded between the Kingdom of Romania and the Kingdom of Yugoslavia (14 December 1931).

38/ Convention between Norway and Sweden on Certain Questions Relating to the Law of Watercourses (11 May 1929).

agreement provides that applications for authorizations of certain activities should be addressed to the competent authorities of the State in whose territory the activity is to be undertaken, together with a detailed description of the activity and its plan. The authorities should send a copy of this application and plans, etc. to the other State. The article states:

"PROCEDURE.

"Applications.

"Article 14

"1. Applications for authorisations for an undertaking shall be addressed to the competent authority in the country in which the undertaking is to be carried out. If the waterfall, the immovable property or the transport or floating interest on account of which the undertaking is to be carried out belongs to the other country, the application shall be accompanied by a declaration from that State to the effect that it has no objection to the application being considered.

"2. Applications shall be accompanied by the plans, specifications and particulars required to enable the effects which the undertaking will produce in both countries to be determined.

"3. When an application has been received by the authority in the country in which the undertaking is to be carried out, a copy, together with the enclosures, shall be transmitted to the other State."

Judicial decisions and State practice other than agreements

108. The concept of consultation and prior negotiation concerning activities with potential extraterritorial injuries appears to have been a legal requirement developed in a number of judicial decisions. In the Advisory Opinion in Railway Traffic between Lithuania and Poland, the Permanent Court of International Justice stated that the obligation to negotiate is "not only to enter into negotiations but also to pursue them as far as possible with a view to concluding agreements". 39/ In repeating the same requirement, the International Court of Justice stated in the North Sea Continental Shelf Case that, prior to the delimitation of the continental shelf unilaterally by any party, there was an obligation for the parties to enter into negotiations going beyond mere entrance into a formal process and to behave with the intention to reach a conclusion satisfactory to both of them:

> "85. ...
>
> "(a) the parties are under an obligation to enter into negotiations with a view to arriving at an agreement, and not merely to go through a formal process of negotiations as a sort of prior condition for the automatic application of a certain method of delimitation in the absence of agreement; they are under an obligation so to conduct themselves that the negotiations are meaningful, which will not be the case when either of them insists upon its own position without contemplating any modification of it;" 40/

The Court elaborated on the content of the obligation to negotiate: the parties are obligated to take into account all circumstances and to apply equitable principles. Thus it referred to and enumerated principles and factors which should be evaluated and accommodated in order to reach equitable principles in this case:

> "(b) the parties are under an obligation to act in such a way that, in the particular case, and taking all the circumstances into account, equitable principles are applied, - for this purpose the equidistance method can be used, but other methods exist and may be employed, alone or in combination, according to the area involved:" 41/

This is a clear reference to balancing the interest of Denmark and the Netherlands with that of the Federal Republic of Germany. The Court noted that the duty to negotiate was simply an application of the more general principle of international relations that:

> "the judicial settlement of international disputes is simply an alternative to the direct and friendly settlement of such disputes between the parties". 42/

39/ P.C.I.J., Series A/B, No. 42 (1931), p. 116. Emphasis added.

40/ I.C.J. Reports 1969, p. 47. Emphasis added.

41/ Ibid. Emphasis added.

42/ Ibid.

Where negotiations have been found to be faulty, the Court has ordered initiation of fresh negotiations as the appropriate remedy:

> "In the present case [North Sea Continental Shelf], it needs to be observed that whatever the details of the negotiations carried on in 1965 and 1966, they failed of their purpose because the Kingdoms of Denmark and the Netherlands, convinced that the equidistance principle alone was applicable, in consequence of a rule binding upon the Federal Republic, saw no reason to depart from that rule; and equally, given the geographical considerations stated in the last sentence of paragraph 7 above, the Federal Republic could not accept the situation resulting from the application of that rule. So far therefore the negotiations have not satisfied the conditions indicated in paragraph 85 (a), but fresh negotiations are to take place on the basis of the present Judgment". 43/

109. A more general requirement of prior negotiation, but not of agreement in fact, was recognized by the Lake Lanoux Arbitral Tribunal. The Tribunal made references to situations where the other party, the potentially injured State, might, in violation of the rules of good faith, paralyze genuine negotiation efforts. The Tribunals stated that sanctions might be applied in such circumstances:

> "In effect, in order to appreciate in its essence the necessity for prior agreement, one must envisage the hypothesis in which the interested States cannot reach agreement. In such case, it must be admitted that the State which is normally competent has lost its right to act alone as a result of the unconditional and arbitrary opposition of another State. This amounts to admitting a 'right of assent', a 'right of veto', which at the discretion of one State paralyses the exercise of the territorial jurisdiction of another.
>
> "That is why international practice prefers to resort to less extreme solutions by confining itself to obliging the States to seek, by preliminary negotiations, terms for an agreement, without subordinating the exercise of their competences to the conclusion of such an agreement. Thus, one speaks, although often inaccurately, of the 'obligation of negotiating an agreement'. In reality, the engagements thus undertaken by States take very diverse forms and have a scope which varies according to the manner in which they are defined and according to the procedures intended for their execution; but the reality of the obligations thus undertaken is incontestable and sanctions can be applied in the event, for example, of an unjustified breaking off of the discussions, abnormal delays, disregard of the agreed procedures, systematic refusals to take into consideration adverse proposals or interests, and, more generally, in cases of violation of the rules of good faith (Tacna-Arica Arbitration: Reports of International Arbitral Awards, vol. II, pp. 921 et seq.; 1/ Case of Railway Traffic between Lithuania and Poland: P.C.I.J., Series A/B, No. 42, pp. 108 et seq. 2/)." 44/

43/ I.C.J. Reports 1969, p. 48. Emphasis added.

44/ International Law Reports (1957), p. 128. Emphasis added.

The Tribunal, however, does not elaborate on what those sanctions may be. The duty of prior negotiation was recognized as essential in balancing interests, since according to the Tribunal only the affected State can make an accurate evaluation of whether a particular activity may affect its interests:

> "The conflicting interests aroused by the industrial use of international rivers must be reconciled by mutual concessions embodied in comprehensive agreements. States have a duty to seek to enter into such agreements. The "interests" safeguarded in the Treaties between France and Spain included interests beyond specific legal rights. A State wishing to do that which will affect an international watercourse cannot decide whether another State's interests will be affected; the other State is the sole judge of that and has the right to information on the proposals." 45/

110. The obligation to negotiate genuinely and in good faith was thus restated in the Lake Lanoux award:

> "Consultations and negotiations between the two States must be genuine, must comply with the rules of good faith and must not be mere formalities. The rules of reason and good faith are applicable to procedural rights and duties relative to the sharing of the use of international rivers; and the subjecting by one State of such rivers to a form of development which causes the withdrawal of some supplies from its basin, are not irreconcilable with the interests of another State." 46/

111. The prinicple of pior negotiation applies also to disputes involving distribution of shared resources in the common domain. For example, in the Fisheries Jurisdiction Case a unilateral extension of Iceland's fishing rights beyond the area of 12 miles from its baselines was denied effect because of, among other things, Iceland's failure to observe the duty of prior negotiation with interested States. The Court held that both the United Kingdom and Iceland were under mutual obligations to negotiate in good faith for the equitable solution of the distribution of the fishery rights:

> "79. For these reasons,
>
> "THE COURT,
>
> "by ten votes to four,
>
> "(1) finds that the Regulations concerning the Fishery Limits off Iceland (Reglugerð um fiskveiðilandhelgi Islands) promulgated by the Government of Iceland on 14 July 1972 and constituting a unilateral extension of the exclusive fishing rights of Iceland to 50 nautical miles from the baselines specified therein are not opposable to the Government of the United Kingdom;

45/ Ibid., p. 128.

46/ Ibid., Emphasis added.

"(2) finds that, in consequence, the Government of Iceland is not entitled unilaterally to exclude United Kingdom fishing vessels from areas between the fishery limits agreed to in the Exchange of Notes of 11 March 1961 and the limits specified in the Icelandic Regulations of 14 July 1972, or unilaterally to impose restrictions on the activities of those vessels in such areas;

"by ten votes to four,

"(3) holds that the Government of Iceland and the Government of the United Kingdom are under mutual obligations to undertake negotiations in good faith for the equitable solution of their differences concerning their respective fishery rights in the areas specified in subparagraph 2;" 47/

It appears from the above decision that activities beyond territorial jurisdiction with potentially direct and substantial injuries to other States may be undertaken only after prior negotiations leading to the consent of the affected States. The Court does not address the issue of what should be done if no agreement is reached after bona fide negotiations. In State interactions prior negotiations regarding the site of nuclear power plants in Central Europe are also consistent with this view. 48/ In Dukovany, Czechoslovakia, approximately 35 kilometres from the Austrian border, two Soviet-designed 440 megawatt electrical power reactors were scheduled to be operating by 1980. The closeness of the location to the Austrian border led to a demand by the Austrian Ministry for Foreign Affairs for joint talks with Czechoslovakia about the safety of the facility. This was accepted by the Czech Government. 49/ The most extensive negotiation occurred between Switzerland and Austria regarding Swiss plans to construct a 900 MW (e) nuclear power plant near Rüthi in the Upper Rhine Valley close to the Austrian border. As the result of Austrian objections, 50/ the Swiss Government entered into consultations with the Austrian Federal Government as well as the Voralberg State Government, the federated state which would have been affected as the result of the Swiss plan. 51/ The talks seemed to have been focused on the legal principles of good

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47/ I.C.J. Reports 1974, p. 34.

48/ Information regarding these negotiations is gathered by the Secretariat from second-hand sources.

49/ Osterreichische Zeitschrift für Aussenpolitik, vol. 15 (1975), p. 290, cited in Handl, "An international legal perspective on the conduct of abnormally dangerous activities in frontier areas: the case of nuclear power plant siting", Ecology Law Quarterly, vol. 7 (1978), p. 28, hereafter cited as Handl.

50/ Neue Zürcher Zeitung, Fernausgabe, 1 May 1974, p. 27, No. 118, cited in Handl, loc. cit., p. 29, footnote 141.

51/ Osterreichische Zeitschrift für Aussenpolitik, vol. 12 (1972), p. 349, and ibid., vol. 14 (1974), p. 224, cited in Handl, loc. cit., p. 29, footnote 143.

neighbourliness. 52/ The Swiss Government evidently re-evaluated the entire project. Before the re-evaluation of the project was completed by the Swiss Government, the Austrian Foreign Minister was to have stated in a press conference that if the Government of its federated state Voralberg still believed that the re-evaluated project was in conflict with the principle of good neighbourliness, the Austrian Government was committed to assert formally the illegality of the Swiss project. 53/ There is no direct evidence to conclude that the postponement of the construction of the nuclear plant by the Swiss Government was due to the Austrian objection or the acceptance of Austria's legal demands. A number of other factors could have affected the Swiss decision, such as domestic opposition to the plant, 54/ or the Government's energy policy. 55/ In evaluating the situation, at least one author has concluded that the Austrian objection was an important element affecting the Swiss decision concerning the nuclear plant. 56/

112. In 1973, the Belgian Government intended to construct a refinery near its frontier with the Netherlands. The Dutch Government voiced its concern that the project not only threatened the nearby Dutch national park, but also other neighbouring countries. It was stated by the Dutch Government that it was a principle accepted in Europe that before initiating any activity which may cause injuries to neighbouring States, the acting State should negotiate with the former. 57/ The Dutch Government appears to have been referring to a regional expectation or standard of behaviour. A similar concern was expressed by the Belgian Parliament which asked its Government how it intended to resolve the problem. The Government stated that the project had been postponed and the matter was being negotiated with the Dutch Government. The Belgian Government further assured its Parliament that it respected the principles in the Benelux Accords that the parties should inform each other of those of their activities which might have harmful consequences to the other member States. 58/

52/ Ibid., vol. 13 (1973), p. 162, cited in Handl, loc. cit., p. 29, footnote 144.

53/ This position of the Austrian Government, the Foreign Minister asserted, had been communicated to the Swiss Government. See Osterreichische Zeitschrift für Aussenpolitik, vol. 14 (1974), p. 288, cited in Handl, loc. cit., p. 29, footnote 144.

54/ Neue Zürcher Zeitung, Fernausgabe, No. 118, 1 May 1974, p. 27, cited in Handl, loc. cit., footnote 141.

55/ Handl, loc. cit., p. 30.

56/ Ibid.

57/ Belgium Parliamentary Records, Recueil de points de vue belges, 19 July 1973, p. 19.

58/ Ibid.

1. Definition of harm

113. The characterization of harm or injury for the purposes of impact assessment may differ from that of harm or injury entailing liability; harm or injury requiring prior consultations may or may not be compensable as a consequence of liability.

114. For clarity, injury for purposes of prior negotiation and consultation may be subdivided into material, non-material and potential. There is no intention here to clearly define injury or harm. For the purposes of this study, material harm means "physical", "quantitative" or "tangible" injury to the State's interests. Non-material harm refers to moral or qualitative harm, for example, a blow to the dignity or respect of a State, such as broadcasting materials into another State which are inconsistent with its internal order and its territorial integrity. With regard to some types of activities, such as atmospheric nuclear tests, it is almost certain that at some point in the future some harm will be done to certain interests. However, with respect to other types of activities, harm is not expected to result in every case but may result in some cases only. This latter type of injury is referred to as potential injury and includes lost future interest and harm likely to result from accidental injuries. Characterization of substantial harm, and its point of separation from tolerable harm not requiring prior negotiation and consultation, has been a difficult issue which does not appear to have been resolved or treated evenly and uniformly in State practice. Some treaties have enumerated the kinds of injuries which are not to be tolerated among the parties and therefore activities leading to them are prohibited. Other treaties have referred in general terms to activities or certain activities leading to some injuries. There are also treaties and judicial decisions requiring consultation and prior negotiation for any activity. It would not be totally accurate, however, to assume that the negotiation and consultation requirement in the latter is due to the inherent character of certain activities themselves, and not the injuries they cause. When it is known that certain injuries will be always caused by certain activities, the activities themselves are then regulated so to prevent or minimize their harmful effects.

Multilateral agreements

115. In some multilateral conventions the concept of harm has been described in general terms as a condition affecting human life and changing the quality of a shared resource such as the sea water, or land-based resources, etc. These conventions, then, have enumerated hazardous substances the introduction of which into shared domains or the territory of another party has been considered harmful. Some conventions have listed substances whose disposal should be stage by stage either eliminated or restricted. The list of substances not injurious for purposes of liability may nevertheless provide sufficient grounds for the purposes of negotiation and consultation. For example, the Convention for the Prevention of Marine Pollution from Land-based Sources provides in article 4 an obligation for parties to eliminate or restrict the disposal of certain substances to the environment:

"ARTICLE 4

"1. The Contracting Parties undertake:

"a) to eliminate, if necessary by stages, pollution of the maritime area from land-based sources of substances listed in Part I of Annex A to the present Convention.

"b) to limit strictly pollution of the maritime area from land-based sources of the substances listed in Part II of Annex A to the present Convention.

"2. In order to carry out the undertakings in paragraph 1 of this Article, the Contracting Parties, jointly or individually as appropriate, shall implement programmes and measures:

"a) for the elimination, as a matter of urgency, of pollution of the maritime area from land-based sources by substances listed in Part I of Annex A to the present Convention;

"b) for the reduction or, as appropriate, elimination of pollution of the maritime area from land-based sources by substances listed in Part II of Annex A to the present Convention. These substances shall be discharged only after approval has been granted by the appropriate Authorities within each contracting State. Such approval shall be periodically reviewed.

"3. The programmes and measures adopted under paragraph 2 above shall include, as appropriate, specific regulations or standards governing the quality of the environment, discharges into the maritime area, such discharges into watercourses as affect the maritime area, and the composition and use of substances and products and shall take into account the latest technical developments.

"The programmes shall contain time-limits for their completion.

"4. Furthermore, the Contracting Parties may, jointly or individually as appropriate, implement programmes or measures to forestall, reduce or eliminate pollution of the maritime area from land-based sources by a substance not then listed in Annex A to the present Convention, if scientific evidence has established that a serious hazard may be created in the maritime area by that substance and if urgent action is necessary."

116. Thus the Convention lists substances the deposits of which are to be eliminated. Part I of annex A lists these substances:

"ANNEX A

"The allocation of substances to Parts I, II and III below takes account of the following criteria:

"a) persistence

"b) toxicity or other noxious properties

"c) tendency to bio-accumulation

"These criteria are not necessarily of equal importance for a particular substance or group of substances, and other factors such as the location and quantities of the discharge may need to be considered."

"Part I

"Substances are included in this Part

"(i) because they are not readily degradable or rendered harmless by natural processes; and

"(ii) because they may either

"(a) give rise to dangerous accumulation of harmful material in the food chain, or

"(b) endanger the welfare of living organisms causing undesirable changes in the marine eco-systems, or

"(c) interfere seriously with the harvest of sea foods or with other legitimate uses of the sea; and

"(iii) because it is considered that pollution by these substances necessitates urgent action.

"1. Organohalogen compounds and substances which may form such compounds in the marine environment, excluding those which are biologically harmless, or which are rapidly converted in the sea into substances which are biologically harmless.

"2. Mercury and mercury compounds.

"3. Cadmium and cadmium compounds.

"4. Persistent synthetic materials which may float, remain in suspension or sink, and which may seriously interfere with any legitimate uses of the sea.

"5. Persistent oils and hydrocarbons of petroleum origin."

117. Part II of annex A lists substances the disposal of which is to be strictly limited:

"Part II

"Substances are included in this Part because, although exhibiting similar characteristics to the substances in Part I and requiring strict control, they seem less noxious or are more readily rendered harmless by natural processes.

"1. Organic compounds of phosphorous, silicon, and tin and substances which may form such compounds in the marine environment, excluding those which are biologically harmless, or which are rapidly converted in the sea into substances which are biologically harmless.

"2. Elemental phosphorus.

"3. Non-persistent oils and hydrocarbons of petroleum origin.

"4. The following elements and their compounds.

Arsenic	Lead
Chromium	Nickel
Copper	Zinc

"5. Substances which have been agreed by the Commission as having a deleterious effect on the taste and/or smell of products derived from the marine environment for human consumption."

118. Part III includes a list of substances similar to those listed in part I but, because they are already the subject of research by several international organizations and institutions they are put into a separate category:

"Part III

"Substances are included in this Part because, although they display characteristics similar to those of substances listed in Part I and should be subject to stringent controls with the aim of preventing and, as appropriate, eliminating the pollution which they cause, they are already the subject of research, recommendations and, in some cases, measures under the auspices of several International Organisations and Institutions.

"Those substances are subject to the provisions of Article 14: - Radioactive substances, including wastes."

119. Once the Convention has exhausted the list of substances the disposal of which is to be eliminated or strictly limited, it goes back to a general definition of injury which the disposal of substances not listed in part I of the Convention may cause to another State. Hence there are no references to substances; there is only a general reference to injury.

120. Article 9 of this Convention requires consultations when pollution from land-based sources originating from the territory of a contracting party by substances not listed in part I of annex A is likely to prejudice the interests of one or more of the other parties to the Convention. Note the reference to potential injury, requiring consultation:

"ARTICLE 9

"1. When pollution from land-based sources originating from the territory of a Contracting Party by substances not listed in Part 1 of Annex A of the present Convention is likely to prejudice the interests of one or more of the other Parties to the Convention, the Contracting Parties concerned undertake to enter into consultation, at the request of any one of them, with a view to negotiating a co-operation agreement.

"2. At the request of any Contracting Party concerned, the Commission referred to in Article 15 of the present Convention shall consider the question and may make recommendations with a view to reaching a satisfactory solution.

"3. The special agreements specified in Paragraph 1 of this Article may, among other things, define the areas to which they shall apply, the quality objectives to be achieved, and the methods for achieving these objectives including methods for the application of appropriate standards, and the scientific and technical information to be collected.

"4. The Contracting Parties signatory to these agreements shall, through the medium of the Commission, inform the other Contracting Parties of their purport and of the progress made in putting them into effect." [Emphasis added.]

121. Thus the Convention on the Protection of the Marine Environment of the Baltic Sea Area provides a list of hazardous substances in annex I and noxious substances and materials in annex II, the deposits of which are either prohibited or strictly limited:

"ANNEX I

"HAZARDOUS SUBSTANCES

"The protection of the Baltic Sea Area from pollution by the substances listed below can involve the use of appropriate technical means, prohibitions and regulations of the transport, trade, handling, application, and final deposition of products containing such substances.

"1. DDT (1,1,1-trichloro-2,2-bis-(chlorophenyl)-ethane) and its derivatives DDE and DDD.

"2. PCB's (polychlorinated biphenyls)."

"ANNEX II

"NOXIOUS SUBSTANCES AND MATERIALS

"The following substances and materials are listed for the purposes of Article 6 of the present Convention.

"The list is valid for substances and materials introduced as waterborne into the marine environment. The Contracting Parties shall also endeavour to use best practicable means to prevent harmful substances and materials from being introduced as airborne into the Baltic Sea Area.

"A For urgent consideration

"1. Mercury, cadmium, and their compounds.

"B

"2. Antimony, arsenic, beryllium, chromium, copper, lead, molybdenum, nickel, selenium, tin, vanadium, zinc, and their compounds, as well as elemental phosphorus.

"3. Phenols and their derivatives.

"4. Phthalic acid and its derivatives.

"5. Cyanides.

"6. Persistent halogenated hydrocarbons.

"7. Polycyclic aromatic hydrocarbons and their derivatives.

"8. Persistent toxic organosilicic compounds.

"9. Persistent pesticides, including organophosphoric and organostannic pesticides, herbicides, slimicides and chemicals used for the preservation of wood, timber, wood pulp, cellulose, paper, hides and textiles, not covered by the provisions of Annex I of the present Convention.

"10. Radioactive materials.

"11. Acids, alkalis and surface active agents in high concentrations or big quantities.

"12. Oil and wastes of petrochemical and other industries containing lipid-soluble substances.

"13. Substances having adverse effects on the taste and/or smell of products for human consumption from the sea, or effects on taste, smell, colour,

transparency or other characteristics of the water seriously reducing its amenity values.

"14. Materials and substances which may float, remain in suspension or sink, and which may seriously interfere with any legitimate use of the sea.

"15. Lignin substances contained in industrial waste waters.

"16. The chelators EDTA (ethylenedinitrilotetraacetic acid or ethylenediaminetetraacetic acid) and DTPA (diethylenetriaminopentaacetic acid)."

122. Annex II of the Convention states goals, criteria and measures concerning the prevention of land-based pollution and annex IV provides for measures to be taken into account for eliminating or minimizing pollution from ships. Annexes I to IV list the different oil substances; annex II formulates guidelines for the categorization of noxious liquid substances; annex III lists noxious liquid substances carried in bulk; annex IV lists other liquid substances carried in bulk, and annex V of the Convention provides for exceptions from the general prohibition of dumping of waste and other matter in the Baltic Sea Area. They are:

"ANNEX V

"EXCEPTIONS FROM THE GENERAL PROHIBITION OF DUMPING OF WASTE AND OTHER MATTER IN THE BALTIC SEA AREA

"Regulation 1

"In accordance with Paragraph 2 of Article 9 of the present Convention the prohibition of dumping shall not apply to the disposal at sea of dredged spoils provided that:

"1. they do not contain significant quantities and concentrations of substances to be defined by the Commission and listed in Annexes I and II of the present Convention; and

"2. the dumping is carried out under a prior special permit given by the appropriate national authority, either

"a) within the area of the territorial sea of the Contracting Party; or

"b) outside the area of the territorial sea, whenever necessary, after prior consultations in the Commission.

"When issuing such permits the Contracting Party shall comply with the provisions in Regulation 3 of this Annex.

"Regulation 2

"1. The appropriate national authority referred to in Paragraph 2 of Article 9 of the present Convention shall:

"a) issue special permits provided for in Regulation 1 of this Annex;

"b) keep records of the nature and quantities of matter permitted to be dumped and the location, time and method of dumping;

"c) collect available information concerning the nature and quantities of matter that has been dumped in the Baltic Sea Area recently and up to the coming into force of the present Convention, provided that the dumped matter in question could be liable to contaminate water or organisms in the Baltic Sea Area, to be caught by fishing equipment, or otherwise to give rise to harm, and the location, time and method of such dumping.

"2. The appropriate national authority shall issue special permits in accordance with Regulation 1 of this Annex in respect of matter intended for dumping in the Baltic Sea Area:

"a) loaded in its territory;

"b) loaded by a vessel or aircraft registered in its territory or flying its flag, when the loading occurs in the territory of a State not Party to the present Convention.

"3. When issuing permits under Sub-Paragraph 1 a) above, the appropriate national authority shall comply with Regulation 3 of this Annex, together with such additional criteria, measures and requirements as they may consider relevant.

"4. Each Contracting Party shall report to the Commission, and where appropriate to other Contracting Parties, the information specified in Sub-Paragraph 1 c) of Regulation 2 of this Annex. The procedure to be followed and the nature of such reports shall be determined by the Commission.

"Regulation 3

"When issuing special permits according to Regulation 1 of this Annex the appropriate national authority shall take into account:

"1. Quantity of dredged spoils to be dumped.

"2. The content of the matter referred to in Annexes I and II of the present Convention.

"3. Location (e.g. co-ordinates of the dumping area, depth and distance from coast) and its relation to areas of special interest (e.g. amenity areas, spawning, nursery and fishing areas, etc.).

"4. Water characteristics, if dumping is carried out outside the territorial sea, consisting of:

"a) hydrographic properties (e.g. temperature, salinity, density, profile);

"b) chemical properties (e.g. pH, dissolved oxygen, nutrients);

"c) biological properties (e.g. primary production and benthic animals).

"The data should include sufficient information on the annual mean levels and the seasonal variation of the properties mentioned in this Paragraph.

"5. The existence and effects of other dumping which may have been carried out in the dumping area.

"Regulation 4

"Reports made in accordance with Paragraph 5 of Article 9 of the present Convention shall include the following information:

"1. Location of dumping, characteristics of dumped material, and counter measures taken:

"a) location (e.g. co-ordinates of the accidental dumping site, depth and distance from the coast);

"b) method of deposit;

"c) quantity and composition of dumped matter as well as its physical (e.g. solubility and density), chemical and biochemical (e.g. oxygen demand, nutrients), and biological properties (e.g. presence of viruses, bacteria, yeasts, parasites);

"d) toxicity;

"e) content of the substances referred to in Annexes I and II of the present Convention;

"f) dispersal characteristics (e.g. effects of currents and wind, and horizontal transport and vertical mixing);

"g) water characteristics (e.g. temperature, pH, redox conditions, salinity and stratification);

"h) bottom characteristics (e.g. topography, geological characteristics and redox conditions);

"i) counter measures taken and follow-up operations carried out or planned.

"2. General considerations and conditions:

"a) possible effects on amenities (e.g. floating or stranded material, turbidity, objectionable odour, discolouration and foaming);

"b) possible effect on marine life, fish and shellfish culture, fish stocks and fisheries, seaweed harvesting and cultures; and

"c) possible effects on other uses of the sea (e.g. impairment of water quality for industrial use, underwater corrosion of structures, interference with ship operations from floating materials, interference with fishing or navigation and protection of areas of special importance for scientific or conservation purposes)."

The Convention allows exceptions from the general prohibition of the dumping of waste. It permits dumping of some wastes under certain conditions including prior negotiations with the Commission (regulation 1 (2-6)), obtaining permission from appropriate national authorities referred to in the Convention (regulation 2) and observing other detailed regulations concerning the content of the waste or the amount and the location of the dumping. These requirements take into account the general interest of all the coastal States as well as the special interests of individual coastal States, and accommodate them by permitting dumping of substances at locations where they may not cause immediate tangible harm to another State.

23. The Convention on the protection of the Mediterranean Sea also spells out in Annex II the hazardous substances the dumping of which requires special care:

"ANNEX II

"The following wastes and other matter the dumping of which requires special care are listed for the purposes of article 5.

"1. (i) Arsenic, lead, copper, zinc, beryllium, chromium, nickel, vanadium, selenium, antimony and their compounds;

"(ii) Cyanides and fluorides;

"(iii) Pesticides and their by-products not covered in Annex I;

"(iv) Synthetic organic chemicals, other than those referred to in Annex I, likely to produce harmful effects on marine organisms or to make edible marine organisms unpalatable.

"2. (i) Acid and alkaline compounds the composition and quantity of which have not yet been determined in accordance with the procedure referred to in Annex I, paragraph A. 8.

"(ii) Acid and alkaline compounds not covered by Annex I, excluding compounds to be dumped in quantities below thresholds which shall be determined by the Parties in accordance with the procedure laid down in article 14, paragraph 3 of this Protocol.

"3. Containers, scrap metal and other bulky wastes liable to sink to the sea bottom which may present a serious obstacle to fishing or navigation.

"4. Substances which, though of a non-toxic nature may become harmful owing to the quantities in which they are dumped, or which are liable to reduce amenities seriously or to endanger human life or marine organisms or to interfere with navigation.

"5. Radioactive waste or other radioactive matter which will not be included in Annex I. In the issue of permits for the dumping of this matter, the Parties should take full account of the recommendations of the competent international body in this field, at present the International Atomic Energy Agency."

124. Annex III of the Convention lists the factors to be considered in establishing criteria governing the issue of permits for the dumping of matters at sea. They include the quantity of waste, the site of dumping, etc.:

"ANNEX III

"The factors to be considered in establishing criteria governing the issue of permits for the dumping of matter at sea taking into account article 7 include:

"A. Characteristics and composition of the matter

"1. Total amount and average compositions of matter dumped (e.g. per year).

"2. Form (e.g. solid, sludge, liquid or gaseous).

"3. Properties: physical (e.g. solubility and density), chemical and biochemical (e.g. oxygen demand, nutrients) and biological (e.g. presence of viruses, bacteria, yeasts, parasites).

"4. Toxicity.

"5. Persistence: physical, chemical and biological.

"6. Accumulation and biotransformation in biological materials or sediments.

"7. Susceptibility to physical, chemical and biochemical changes and interaction in the aquatic environment with other dissolved organic and inorganic materials.

"8. Probability of production of taints or other changes reducing market-ability of resources (fish, shell-fish etc.)

"B. Characteristics of dumping site and method of deposit

"1. Location (e.g. co-ordinates of the dumping area, depth and distance from the coast), location in relation to other areas (e.g. amenity areas, spawning, nursery and fishing areas and exploitable resources).

"2. Rate of disposal per specific period (e.g. quantity per day, per week, per month).

"3. Methods of packaging and containment, if any.

"4. Initial dilution achieved by proposed method of release, particularly the speed of the ship.

"5. Dispersal characteristics (e.g. effects of currents, tides and wind on horizontal transport and vertical mixing).

"6. Water characteristics (e.g. temperature, pH, salinity, stratification, oxygen indices of pollution - dissolved oxygen (DO), chemical oxygen demand (COD), biochemical oxygen demand (BOD), nitrogen present in organic and mineral form, including ammonia, suspended matter other nutrients and productivity).

"7. Bottom characteristics (e.g. topography, geochemical and geological characteristics and biological productivity).

"8. Existence and effects of other dumpings which have been made in the dumping area (e.g. heavy metal background reading and organic carbon content).

"9. When issuing a permit for dumping, the Contracting Parties shall endeavour to determine whether an adequate scientific basis exists for assessing the consequences of such dumping in the area concerned, in accordance with the foregoing provisions and taking into account seasonal variations.

"C. General considerations and conditions

"1. Possible effects on amenities (e.g. presence of floating or stranded material, turbidity, objectionable odour, discolouration and foaming).

"2. Possible effects on marine life, fish and shellfish culture, fish stocks and fisheries, seaweed harvesting and culture.

"3. Possible effects on other uses of the sea (e.g. impairment of water quality for industrial use, underwater corrosion of structures, interference with ship operations from floating materials, interference with fishing or navigation through deposit of waste or solid objects on the sea floor and protection of areas of special importance for scientific or conservation purposes).

"4. The practical availability of alternative land-based methods of treatment disposal or elimination, or of treatment to render the matter less harmful for sea dumping."

It should be noted that factors 2 and 3 in section C above are related to the frustration of other uses of the sea. Factor 4 relates to the possibilities of practical available alternatives and bears on the question of whether or not some harm should be tolerated in the absence of any other practical alternative method of waste disposal.

125. The above Conventions are related more to the protection of shared domains in which the harmful consequences to coastal States or to a third party may be least direct, immediate or tangible. Yet the Conventions have given detailed instructions as to the content and quantity of substances and location of their dumping as well as to the balancing of interests of the parties and the costs and benefits involved. Annex V of the Convention on the Protection of the Marine Environment of the Baltic Sea Area and annex III (c) of the Convention on the protection of the Mediterranean Sea at least have attempted to introduce factors to balance the interests of the parties, as well as those of the general community. Article 194 of the Convention on the Law of the Sea also requests States to take measures to minimize to the fullest possible extent the disposal of certain substances, and certain other pollutant materials:

"3. ...

"(a) the release of toxic, harmful or noxious substances, especially those which are persistent, from land-based sources, from or through the atmosphere or by dumping;

"(b) pollution from vessels, in particular measures for preventing accidents and dealing with emergencies, ensuring the safety of operations at sea, preventing intentional and unintentional discharges, and regulating the design, construction, equipment, operation and manning of vessels;

"(c) pollution from installations and devices used in exploration or exploitation of the natural resources of the sea-bed and subsoil, in particular measures for preventing accidents and dealing with emergencies, ensuring the safety of operations at sea, and regulating the design, construction, equipment, operation and manning of such installations or devices;

"(d) pollution from other installations and devices operating in the marine environment, in particular measures for preventing accidents and dealing with emergencies, ensuring the safety of operations at sea, and regulating the design, construction, equipment, operation and manning of such installations or devices.

"4. In taking measures to prevent, reduce or control pollution of the marine environment, States shall refrain from unjustifiable interference with activities conducted in pursuance of the rights exercised and duties performed by other States in conformity with this Convention.

"5. The measures taken in accordance with this Part shall include those necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life."

126. The Convention relative à la protection du Rhin contre pollution chimique enumerates substances the discharge of which to the Rhine must be eliminated (annex I) and substances the discharge of which should be reduced (annex II). The elimination and reduction of discharge of these substances have been prescribed on the basis that they may endanger the following uses of the Rhine water:

"Article 1er

1. ...

2. ...

...

a) la production d'eau d'alimentation en vue de la consommation humaine,

b) la consommation par les animaux domestiques et sauvages,

c) la conservation et la mise en valeur des espèces naturelles pour ce qui est tant de la faune que de la flore, et la conservation du pouvoir autoépurateur des eaux,

d) la pêche,

e) les fins récréatives, compte tenu des exigences de l'hygiène et de l'esthétique,

f) les apports directs ou indirects d'eaux douces aux terres à des fins agricoles,

g) la production d'eau à usage industriel, et la nécessité de préserver une qualité acceptable des eaux de mer."

127. Similar references to injury or harm have been made in the International Convention for the Prevention of Pollution from Ships. Article 2 of the Convention provides:

"Article 2

"...

"...

"(2) 'Harmful substance' means any substance which, if introduced into the sea, is liable to create hazards to human health, to harm living resources and

marine life, to damage amenities or to interfere with other legitimate uses of the sea, and includes any substance subject to control by the present Convention.

"(3) (a) 'Discharge', in relation to harmful substances or effluents containing such substances, means any release howsoever caused from a ship and includes any escape, disposal, spilling, leaking, pumping, emitting or emptying."

This article gives a broad definition of harm: it may include material or non-material injury to human health; injury to the living resources of the sea, as well as interference with the legitimate uses of the sea.

128. Article 1 of the Convention on Long-range Transboundary Air Pollution defines air pollution in terms of its effect:

"Article 1

"For the purposes of the present Convention:

"(a) 'air pollution' means the introduction by man, directly or indirectly, of substances or energy into the air resulting in deleterious effects of such a nature as to endanger human health, harm living resources and ecosystems and material property and impair or interfere with amenities and other legitimate uses of the environment, and 'air pollutants' shall be construed accordingly;".

And "pollution damage" for the purposes of the Convention on Civil Liability for Oil Pollution Damage from offshore operations has been defined as "loss or damage outside the installation caused by contamination resulting from the escape or discharge of oil from the installation and includes the cost of preventive measures and further loss or damage outside the installation caused by preventive measures" (art. 1 (6)).

129. A general reference to damage by pollution has been made in article 198 of the Convention on the Law of the Sea. It requires a State which has become aware of an imminent danger of marine pollution to notify other States who might be affected by it:

"Article 198

"Notification of imminent or actual damage

"When a State becomes aware of cases in which the marine environment is in imminent danger of being damaged or has been damaged by pollution, it shall immediately notify other States it deems likely to be affected by such damage, as well as the competent international organizations."

Reference to substantial pollution and significant and harmful changes to the marine environment have been made in article 206 of the Convention. This article requires the acting State to communicate reports about assessment of activities

under its jurisdiction when there are reasonable grounds that they may cause the above injuries:

"Article 206

"Assessment of potential effects of activities

"When States have reasonable grounds for believing that planned activities under their jurisdiction or control may cause substantial pollution of or significant and harmful changes to the marine environment, they shall, as far as practicable, assess the potential effects of such activities on the marine environment and shall communicate reports of the results of such assessments in the manner provided in article 205."

130. Sometimes conventions enumerate or make general references to substances and activities which may frustrate certain other uses of the shared domain.

131. The European agreement on the Restriction of the Use of Certain Detergents in Washing and Cleaning Products prohibits the use of certain products containing one or more synthetic detergent which, under conditions of normal use, might adversely affect human or animal health. Relevant articles of the Agreement provide:

"ARTICLE 1

"The Contracting Parties undertake to adopt measures as effective as possible in the light of the available techniques, including legislation if it is necessary to ensure that:

"(a) in their respective territories, washing or cleaning products containing one or more synthetic detergents are not put on the market unless the detergents in the product considered are, as a whole, at least 80% susceptible to biological degradation;

"(b) the appropriate measurement and control procedures are implemented in their respective territories to guarantee compliance with the provisions of sub-paragraph (a) of this Article.

"ARTICLE 2

"Compliance with the provisions of paragraph (a) of Article 1 of this Agreement must not result in the usage of detergents which, under conditions of normal use, might affect adversely human or animal health."

132. The International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties grants competence to coastal States to take action to prevent "major harmful consequences" to their coast lines which may result from oil pollution. Paragraph 1 of article 1 provides:

"1. Parties to the present Convention may take such measures on the high seas as may be necessary to prevent, mitigate or eliminate grave and imminent danger to their coastline or related interests from pollution or threat of

pollution of the sea by oil, following upon a maritime casualty or acts related to such a casualty, which may reasonably be expected to result in major harmful consequences."

The term "major harmful consequences" has not been defined in the Convention.

133. In at least one convention, a particular interest has been accorded legal protection. Thus performance of any activity frustrating that particular interest requires prior consultation and negotiation. Paragraph 3 of article 1 of the Convention on the Protection of Lake Constance from Pollution provides:

> "Specifically, the riparian States will mutually notify each other in advance of projects for water use which, if carried out, could interfere with the interests of another riparian State as regards maintaining the wholesomeness of the waters of Lake Constance. Such projects shall not be carried out until they have been jointly discussed by the riparian States, unless either there is danger in delay or the other States have explicitly agreed that they shall be put into effect immediately." [Emphasis added.]

134. A different term for injury and a different method of consultation have been provided for in the Convention on the Protection of the Environment between Denmark, Finland, Norway and Sweden. This Convention describes environmentally harmful activities as those which entail environmental nuisance. Article 1 provides:

"Article 1

> "For the purpose of this Convention, environmentally harmful activities shall mean the discharge from the soil or from buildings or installations of solid or liquid waste, gases or any other substance into watercourses, lakes or the sea and the use of land, the seabed, buildings or installations in any other way which entails, or may entail environmental nuisance by water pollution or any other effect on water conditions, sand drift, air pollution, noise, vibration, changes in temperature, ionizing radiation, light etc.
>
> "The Convention shall not apply insofar as environmentally harmful activities are regulated by a special agreement between two or more of the Contracting States." [Emphasis added.]

The Protocol to the above Convention explicitly mentions that the discharges of waste mentioned in article 1 are not in themselves harmful, but only when they entail or may entail a nuisance to the surroundings. The relevant paragraph of the Protocol provides:

> "In the application of Article 1 discharge from the soil, or from buildings or installations of solid or liquid waste, gases or other substances into watercourses, lakes or the sea shall be regarded as environmentally harmful activities only if the discharge entails or may entail a nuisance to the surroundings." [Emphasis added.]

135. Article 3 of the above Convention on the protection of the environment, without explicitly requiring prior negotiation, provides that any person who is affected or may be affected by a nuisance caused by environmentally harmful activities in another contracting State may bring before the appropriate authority of that State the question of the permissibility of such activities, including measures to prevent damage. The article states:

"Article 3

"Any person who is affected or may be affected by a nuisance caused by environmentally harmful activities in another Contracting State shall have the right to bring before the appropriate Court or Administrative Authority of that State the question of the permissibility of such activities, including the question of measures to prevent damage, and to appeal against the decision of the Court or the Administrative Authority to the same extent and on the same terms as a legal entity of the State in which the activities are being carried out." [Emphasis added.]

The appropriate authority here is the Court or the Administrative Authority of the acting State. Under article 3 equal treatment should be given to the foreign claimant by the appropriate Courts or authorities of the acting State as if the claimants were the citizens of the acting State.

Bilateral agreements

136. The definition of harm for the purposes of prior negotiation, in bilateral agreements, varies from a more exact to a more general characterization. For example, in the 1983 agreement between the United States and Mexico, 59/ there is a general reference to "pollution" (art. 2) and in article 7, on the requirement of assessments of projects, laws and policies, it refers to "significant impacts on the environment" [emphasis added]. In a number of bilateral agreements the terms harm, injury or damage as such have not been used. Instead references have been made to certain activities, changes in the nature of resources, impacts upon material interests, etc. However, due to the more specific and precise subject matter of bilateral agreements, references to certain activities not to be undertaken, or which may be undertaken only in consultation with the other party, are specifically made.

137. The commencement of certain activities and activities which may result in certain outcomes under some bilateral agreements require prior consultations with the other contracting party or with a joint commission. For example, in the agreement between Poland and the Soviet Union 60/ relating to their joint frontier, the contracting parties may not remove, without the agreement of both parties, the existing hydraulic installations on frontier waters if it changes the level of water. Article 14 of the agreement provides:

"Article 14

"1. The Contracting Parties agree that the presence and further utilisation of existing hydraulic installations on frontier waters and on their banks shall not be hindered in any way. If the removal of such installations should involve a change in the level of the water, the necessary work shall not be undertaken without the agreement of the frontier authorities of both Contracting Parties." [Emphasis added.]

138. In an agreement between Romania and Yugoslavia relating to the hydraulic system on their frontier water, 61/ references were made to any alteration or any measures which might change to an appreciable extent the hydraulic system in the basin. Article 3 of chapter I of the agreement requires the contracting parties to notify each other if they intend to take any measures which might result in the changes described above. Such notice is a step towards a preliminary establishment

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59/ Agreement between the United States of America and the United Mexican States on Co-operation for the Protection and Improvement of the Environment in the Border Area (14 August 1983).

60/ Convention between the Polish Republic and the Union of Soviet Socialist Republics concerning judicial relations on the State frontier (10 April 1932).

61/ General Convention concerning the hydraulic system concluded between the Kingdom of Romania and the Kingdom of Yugoslavia (14 December 1931).

of agreement between the parties as provided for in article 292 of the Treaty of Trianon. 62/ The relevant paragraph of article 3 of chapter I provides:

"Article 3

"Should either State propose to make any alterations or take any measures or undertake any works in its own territory such as might change to an appreciable extent the hydraulic system in the basins mentioned in Article I above, it shall, by registered letter with notification of receipt send to the other State notice of its intentions, together with a summarised description of such works, alterations or measures, with a view to the preliminary establishment of the agreement provided for by Article 292 of the Treaty of Trianon." [Emphasis added.]

139. Article III of the Convention concerning the Boundary Waters between the ited States and Canada prevents the contracting parties from undertaking activities, other than those provided in the Agreement, which may affect the natural level or flow of boundary waters on the other side of the line unless it is agreed upon by at least one party and approved by their International Joint Commission. Thus, under article IV of the agreement, the United States and Canada have agreed that, except in cases provided for by special agreement between them, they will not permit the construction or maintenance, on their respective territory, of any remedial or protective works or any dams or other obstructions in water flowing from boundary waters or in rivers flowing across the boundary which may raise the natural level of waters on the other side of the boundary unless it is done with the approval of their International Joint Commission. Relevant articles III and IV provide:

"Article III.

"It is agreed that, in addition to the uses, obstructions, and diversions heretofore permitted or hereafter provided for by special agrement between the Parties hereto, no further or other uses or obstructions or diversions, whether temporary or permanent, of boundary waters on either side of the line, affecting the natural level or flow of boundary waters on the other side of the line, shall be made except by authority of the United States or the Dominion of Canada within their respective jurisdictions and with the approval, as hereinafter provided, of a joint commission, to be known as the International Joint Commission.

"...

"Article IV.

"The High Contracting Parties agree that, except in cases provided for by special agreement between them, they will not permit the construction or maintenance on their respective sides of the boundary of any remedial or

62/ This Treaty is different from the one under discussion.

protective works or any dams or other obstructions in waters flowing from boundary waters or in waters at a lower level than the boundary in rivers flowing across the boundary, the effect of which is to raise the natural level of waters on the other side of the boundary unless the construction or maintenance thereof is approved by the aforesaid International Joint Commission.

"It is further agreed that the waters herein defined as boundary waters and waters flowing across the boundary shall not be polluted on either side to the injury of health or property on the other."

140. In an agreement negotiated between Canada and the United States 63/ prior to launching two rockets by the latter from the former's territory, the United States reassured Canada that in the event of loss of life, personal injury or damage or loss to property resulting from these rocket launches, the United States Government intends to take all necessary measures to comply fully with its obligation under the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, in particular article VII thereof, and international law. Article VII of the treaty does not specify the kinds of injuries which may entail liability, while the exchange of notes refers to specific injuries. The article further refers to the liability of the launching State as well as the liability of the State from whose territory the rocket has been launched. The exchange of notes between Canada and the United States imposes liability upon the United States only. Injuries, in this agreement, appear to have been synonymous with injuries which may entail liability.

141. Some other bilateral agrements incorporate a more general reference to injury as well as some specific references. The agreement between the Soviet Union and Poland 64/ refers to notification of the outbreak of fire near the frontier area, while article 3 of an agreement between Poland and Czechoslovakia, 65/ requires the consent of the other party for any activity which might affect its water economy, as well as certain specific uses of common waters between the parties. This article provides:

63/ Agreement effected by exchange of notes between the United States of America and Canada concerning liability for loss or damage from certain rocket launches (31 December 1974).

64/ Treaty between the Government of the Union of Soviet Socialist Republics and the Government of the Polish People's Republic concerning the régime of the Soviet-Polish State frontier and co-operation and mutual assistance in frontier matters (15 February 1961), article 29 (4).

65/ Agreement between the Government of the Czechoslovak Republic and the Government of the Polish People's Republic concerning the use of water resources in frontier waters (21 March 1958).

"Article 3

"(1) Neither Contracting Party may, without the consent of the other Contracting Party, carry out any works in frontier waters which may affect the latter Party's water economy.

"(2) The Contracting Parties shall come to agreement on the amount of water to be taken from frontier waters for domestic, industrial, power generation and agricultural requirements and on the discharge of waste water.

"(3) The Contracting Parties shall come to an agreement in each particular case on what runoff ratios are to be preserved in frontier waters.

"(4) The Contracting Parties have agreed to abate the pollution of frontier waters and to keep them clean to such extent as is specifically determined in each particular case in accordance with the economic and technical possibilities and requirements of the Contracting Parties.

"(5) When installations discharging polluted water into frontier waters are constructed or reconstructed, treatment of the waste water shall be required."

[Emphasis added.]

The consent of the Governments is required in an agreement between Finland and the Soviet Union 66/ for activities which may divert water (a) by construction on rivers which may cause damage, or (b) by altering the existing depth or condition of the parts of the watercourses situated in the territory of the other contracting State, thereby damaging the fairway or encroaching upon channels used for navigation or timber-floating. 67/ Article 12 of an agreement between Norway and Sweden 68/ requires the approval of both contracting parties regarding activities which are likely to involve any considerable inconvenience in the territory of one of them in the use of a watercourse for navigation or floating, to hinder the movement of fish or disturb the conditions governing the water supply over an extensive area. This article provides:

66/ Convention between the Republic of Finland and the Russian Socialist Federal Soviet Republic concerning the maintenance of river channels and the regulation of fishing on water courses forming part of the frontier between Finland and Russia (28 October 1922).

67/ Ibid., article 3. Emphasis added.

68/ Convention between Norway and Sweden on Certain Questions Relating to the Law of Watercourses (11 May 1929).

"APPROVAL OF THE OTHER COUNTRY.

"Article 12.

"1. One country may not authorise an undertaking unless the other country has given its approval, if the undertaking is likely to involve any considerable inconvenience in the latter country in the use of a watercourse for navigation or floating or to hinder the movement of fish to the detriment of fishing in that country, or if the undertaking is likely to cause considerable disturbance in conditions governing the water-supply over an extensive area.

"2. If there is no reason to believe that the undertaking will produce the effects mentioned in paragraph 1 in the other country, that country cannot oppose the execution of the undertaking."

Article 13 of the same agreement provides that the consent of the potential injured party is subjected only to the planning of the work or the prevention or reduction of public damage or nuisance. It states:

"Article 13.

"If the other country's consent is necessary, the question shall be decided in accordance with the principles applicable to similar installations, works or operations under that country's laws, subject, however, to the provisions of Articles 4 and 5. The consent may not be subjected to other conditions than those referring to the planning of the work or the prevention or reduction of public damage or nuisances."

142. Activities interfering with the free discharge of waters, changing the quality of waters, or causing flood in the territory of the contracting party may require the approval of a mixed commission. This is stipulated in article 2 of the Agreement between the Federal People's Republic of Yugoslavia and the Romanian People's Republic concerning questions of water control on water control systems and watercourses on or intersected by the State frontier together with the statute of the Yugoslav-Romanian Water Control Commission. The article provides:

"Article 2

"1. The two Contracting States undertake, each in its own territory and jointly on the frontier line, to maintain the beds and installations in good condition, and where necessary to improve their condition, and to keep the installations in operation on water control systems and watercourses and in valleys and depressions on or intersected by the State frontier.

"2. The erection of any new installations and the execution of any new works, in the territory of either Contracting State, which may change the existing regime of the waters, interfere with the free discharge of the waters where it now exists, change the quality of the waters, or cause flooding on water control systems or watercourses or in valleys or depressions on or intersected by the State frontier shall be referred to the Mixed Commission for examination.

"..."

143. with respect to the hours of operation of the Salzburg airport, article 2 (2) of the Agreement between the Federal Republic of Germany and Austria 69/ provides that before modifying the hours which may adversely affect the German interest with respect to safety and order or aircraft noise abatement, the views of the competent German authorities shall be ascertained. It reads:

> "(2) If it is contemplated that the hours of operation of the Salzburg airport shall be extended to include periods between 11 p.m. and 6 a.m. local time, permission to change the existing hours of operation shall be granted only if German interests with respect to safety and order or aircraft noise abatement are not thereby affected. Before granting permission, the competent Austrian aeronautical authorities shall ascertain the views of the competent German aeronautical authorities."

Some bilateral agreements, without reference to injury, require consent of both parties for certain usage of the frontier waters. For example, article 6 of an agreement of 1934 between the United Kingdom and Belgium 70/ concerning the water rights on the boundary between Tanganyika and Ruanda-Urundi provides that if either contracting party intends to utilize the waters of their joint rivers or to permit any person to utilize such waters for irrigation purposes, such contracting party shall give notice to the other Government six months in advance, in order to permit the consideration of any objections which the other contracting Government may want to raise. This article provides:

"Article 6.

> "In the event of either Contracting Government desiring to utilise the waters of any river or stream on the aforesaid boundary or to permit any person to utilise such water for irrigation purposes, such Contracting Government shall give to the other Contracting Government notice of such desire six months before commencing operations for the utilization of such waters, in order to permit of the consideration of any objections which the other Contracting Government may wish to raise."

144. Also article 15 of an agreement between Poland and the Soviet Union 71/ provides for prior agreement between the two Governments for the erection on waters of new dykes and construction of new mills or other hydraulic installations. It provides:

69/ Agreement between the Federal Republic of Germany and the Republic of Austria concerning the effects on the territory of the Federal Republic of Germany of construction and operation of the Salzburg airport (19 December 1967).

70/ Agreement between the United Kingdom of Great Britain and Northern Ireland and Belgium regarding water rights on the boundary between Tanganyika and Ruanda-Urundi (22 November 1934).

71/ Convention between the Polish Republic and the Union of Soviet Socialist Republics concerning judicial relations on the State frontier (10 April 1932).

"Article 15

"The erection on frontier waters of new dykes and the construction of new mills or other hydraulic installations shall in every case be subject to prior agreement between the competent authorities of the Contracting Parties."

145. Article 5 of the Convention on Hydrological Resources between the Republic of Argentina and the Republic of Chile also requires prior notification for activities to be undertaken in their joint waters. It provides:

"5. Cuando un Estado se proponga realizar un aprovechamiento en un lago común o río sucesivo, facilitará previamente al otro el proyecto de la obra, el programa de operación y los demás datos que permitan determinar los efectos que dicha obra producirá en el territorio del Estado vecino."

Exploitation of mineral deposits near the frontier area requires the consent of the other party in an agreement between Norway and the Soviet Union. 72/ Article 18, paragraph 2, refers to the safeguarding of the frontier line and requires a 20 metre-wide space on either side of the borderline within which exploration of mineral resources may not be undertaken, except with the consent of both parties. Article 18 of the agreement provides:

"Article 18

"1. Mineral deposits near the frontier line may not be so prospected or worked as to harm the territory of the other Party.

"2. In order to safeguard the frontier line, there shall be a belt 20 metre wide on either side thereof in which the work referred to in paragraph 1 of the article shall ordinarily be prohibited and shall be permitted only in exceptional cases by agreement between the competent authorities of the Contracting Parties.

"3. If in any particular case it is not expedient to observe the belts referred to in paragraph 2 of this article, the competent authorities of the Contracting Parties shall agree on other measures necessary to safeguard the frontier line."

The reference to harm in paragraph 1 of the above article is general and undefined.

146. In at least one bilateral agreement, the definition of harm, injury, or damage has been equated with a multilateral standard as stipulated in a multilateral convention. Article 12 of a treaty between Liberia and the Federal Republic of Germany 73/ concerning the use of Liberian ports by the nuclear ship of the Federal

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72/ Agreement between the Royal Norwegian Government and the Government of the Soviet Socialist Republics concerning the régime of the Norwegian-Soviet frontier and procedure for the settlement of frontier disputes and incidents (29 December 1949).

73/ Treaty between the Republic of Liberia and the Federal Republic of Germany on the Use of Liberian waters and Ports by N.S. Otto Hahn (27 May 1970).

Republic provides that terms such as "nuclear damage" have the same meaning as those in the 1962 Convention on the Liability of Operators of Nuclear Ships:

"Article 12

"The terms 'nuclear damage', 'nuclear incident', 'nuclear fuel' and 'radioactive products or waste' as used in Articles 13-20 of this Treaty shall have the same meaning as in the Convention on the Liability of Operators of Nuclear Ships opened for signature in Brussels on May 25, 1962, hereinafter referred to as 'the Convention'."

Hence the definition of nuclear injury between the two parties has been established in accordance with an international standard.

147. On the other hand there are two other bilateral agreements which have set forth domestic law standards for injuries. The United States, in its separate agreements with Ireland 74/ and the Netherlands 75/ concerning a visit of the N.S. Savannah to those countries, has agreed to be liable for "public liability" and "nuclear incident" as defined in section II of the United States Atomic Energy Act of 1954 as amended (U.S. Code, title 42, sect. 2014). This requirement is a domestic law standard. It should be noted that in the above agreements injury for the purposes of prior negotiation is the same as injury entailing liability.

148. In a few bilateral agreements references to harm or injury have been general nd rather abstract. For example, the requirements of prior notification and sultation for activities which may cause injury, with no further specification, also been stipulated in an agreement between Hungary and Austria. 76/ It prohibits the contracting parties from taking any unilateral action or from carrying out, without the consent of the other party, any measures or works on the frontier waters which would adversely affect water condition in the territory of the other contracting party. Article 2 of this agreement provides:

74/ Exchange of notes constituting an agreement between the United States of America and Ireland relating to public liability for damage caused by the N.S. Savannah (18 June 1964).

75/ Agreement between the Government of the Kingdom of the Netherlands and the Government of the United States of America on Public Liability for Damage caused by the N.S. Savannah (6 February 1963), article 6.

76/ Treaty between the Hungarian People's Republic and the Republic of Austria concerning the regulation of water economy questions in the frontier region (19 April 1956).

"Article 2

"General Obligations

"1. Each Contracting Party undertakes to refrain from unilaterally - without the consent of the other Contracting Party - carrying out any measures or works on frontier waters (article 1, sub-paragraph 1) which would adversely affect water conditions in the territory of the other Contracting Party. Consent may be refused only if the grounds for such refusal are duly set forth."

149. Also article 4 of the Convention between Yugoslavia and Austria concerning water Economy Questions relating to the Drava requires the Austrian Government to negotiate with the Government of Yugoslavia if it contemplates plans for new installations to divert water from the Drava basin or for construction work which might be to the detriment of Yugoslavia. The agreement has not defined what the term "detriment" means. The article provides:

"Article 4

"Should the Austrian authorities seriously contemplate plans for new installations to divert water from the Drava basin or for construction work which might affect the Drava river regime to the detriment of Yugoslavia, the Austrian Federal Government undertakes to discuss such plans with the Federal People's Republic of Yugoslavia prior to legal negotiations concerning rights in the water."

150. In an agreement between Hungary and Czechoslovakia, 77/ the parties agreed not to allow any works calculated to disturb the flow of the water or the regulation of frontier watercourses. The Treaty between the Netherlands and the Federal Republic of Germany of 1960 78/ obligates the contracting party who intends to take measures which may substantially affect the use and management of water resources in the territory of the other contracting party to notify their Permanent Boundary Waters Commission. Article 60 of this Treaty provides:

77/ Convention Relating to the Settlement of Questions Arising out of the Delimitation of the Frontier between the Kingdom of Hungary and the Czechoslovak Republic (Frontier Statute) (14 November 1928). Paragraph 2 (c) of article 26 of the Convention states:

"(c) The Contracting Parties shall not allow any works calculated to disturb the flow of the water or the regularisation of frontier watercourses. If works contemplated are likely to have an undesirable effect on the bed of frontier watercourses, the competent technical department of the other Party must be consulted."

78/ Treaty between the Kingdom of the Netherlands and the Federal Republic of Germany concerning the course of the common frontier, the boundary waters, real property situated near the frontier, traffic crossing the frontier on land and via inland waters, and other frontier questions (Frontier Treaty) (8 April 1960).

"Article 60

"1. If it is intended to carry into effect, within the territory of one of the Contracting Parties, any measures which may substantially affect the use and management of water resources in the territory of the other Contracting Party, or to allow such measures to be carried into effect, the Permanent Boundary Waters Commission shall be notified thereof as soon as possible.

"2. The Contracting Parties shall notify each other of the authorities or corporations within its territory which are competent to make the notification referred to in paragraph 1."

Judicial decisions and State practice other than agreements

151. The dicta of most judicial decisions refer to the concept of harm for the purposes of consultation and negotiation in very general terms as a condition affecting human life and changing the quality of a shared resource such as sea water or land-based resources, or the quality of a resource exclusively within the injured State's control, such as land, agriculture or even people. These decisions point to numerous hazardous substances which, when introduced into the shared domain or on the territory of another State, would lead to the above conditions. Most cases have referred to "harm" as an interference with or denial of an interest due to activities of the acting State within its own territory or within the shared domain.

152. References to harm were made in the Lake Lanoux award and in the Corfu Channel Judgement. In the former, the Tribunal referred to the duty of safeguarding the interests of parties involved in a treaty. Thus, it stated that these interests go "beyond specific legal rights". It may be interpreted that the Tribunal referred to the safeguarding also of interests not legally protected. Thus, in the opinion of the Tribunal, States cannot unilaterally determine and evaluate such interests of other States in relation to an international watercourse.

> "The 'interests' safeguarded in the treaties between France and Spain included interests beyond specific legal rights. A State wishing to do that which will affect an international watercourse cannot decide whether another State's interests will be affected; the other State is the sole judge of that and has the right to information on the proposals." 79/

The Court in the Corfu Channel case has a different emphasis. It stated that Albania had the obligation "not to allow knowingly its territory to be used for acts contrary to the rights of other States". 80/ The rights here may be interpreted as only the "legally protected interests"; it is a narrower concept than interests as stated in the Lake Lanoux award. The different emphasis by the Tribunal and the Court on interests to be protected may be explained by the following factors: first, the location of the activities which brings about different competing interests and principles with varying degrees of importance. In the Corfu Channel decision, the activity occurred in an international channel located within the territorial jurisdiction of the acting State. Certain rights of passage similar to international servitude have been recognized for other States with respect to the use of another State's territory. In this case it is the right of innocent passage. Hence the coastal State does not seem obliged to consult, negotiate or notify other States exercising innocent passage with regard to activities or conditions which do not affect their right of innocent passage. By contrast, the Lake Lanoux decision dealt with a watercourse in which more than one State had territorial sovereignty. It is not a matter of for example, mere servitude. In addition to the principle of territorial sovereignty, there is a

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79/ International Law Reports (1957), p. 119. Emphasis added.

80/ I.C.J. Reports 1949, p. 22. Emphasis added.

Principle of good neighbourliness, which entails different expectations of behaviour between the neighbours. Secondly, the Court in the Corfu Channel may have been contemplating activities causing injuries that are not to be tolerated per se, such as the frustration of another State's rights, whereas the Tribunal in the Lake Lanoux award was dealing with injuries which may be tolerated, but only by consent.

153. A number of judicial decisions and State interactions appear to deal with material injury. Most often this type of injury is economic in nature or involves harm to the well-being of people. Material injury may occur to another State's interests either within the shared domain or within the exclusive territorial control of the injured State. The Tribunal in Trail Smelter made a broad assertion that:

> "No State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein ...". 81/

154. In equally broad terms, the Italian Court of Cassation in the Société d'énergie électrique du littoral méditerranéen v. Compagnia imprese elecctriche liguri (hereafter cited as Roja) 82/ stated:

81/ United Nations, Reports of International Arbitral Awards, vol. III, p. 1965.

82/ The following is a summary of the facts of this case:

> "On December 17, 1914, a Convention was concluded in Paris between France and Italy for the regulation in the common interest of the utilization of the waters of the river Roja which flows partly in Italy and partly in France. Article 1 of the Convention provided that the High Contracting Parties will reciprocally refrain from using or from permitting the use of the hydraulic power of the Roja and of its tributaries within the territory subject to their exclusive sovereignty in any manner which might lead to a noticeable modification of the existing régime and of the natural flow of the water in the territory of the lower riparian State. Articles 2 and 3 dealt with the rights of the Contracting Parties in respect of the waters of the Roja where the river formed the common frontier. Article 4 entrusted a permanent international commission consisting of delegates of the two Contracting Parties with the application of the principles laid down in the Convention. Article 5 maintained, as between the two Governments, the agreements reached and obligations incurred by the private users in France and Italy of the water power of the Roja. In substance, Article 5 referred to an agreement of February 11, 1914, between the plaintiffs and the defendants which created a modus vivendi to the effect that the defendants promised not to interfere with the waters of the Roja in a manner which might affect the plaintiffs and to remove the effects of

"Although a State, in the exercise of its right of sovereignty, may subject public rivers to whatever regime it deems best, it cannot disregard the international duty, derived from that principle not to impede or to destroy, as a result of this regime, the opportunity of the other States to avail themselves of the flow of water for their own national needs." 83/

Under the above decision, impediment or destruction of other States' opportunities are prohibited. Although many of the decisions refer to material injury in broad, general and undefined terms as some type of injury to interests, their holdings in most cases focus on a particular injury to a particular interest.

155. In the Fisheries Jurisdiction Case, the Court held that Iceland may not unilaterally extend her exclusive fishing rights beyond her territorial waters where such extension would harm the economic interests of other States. The Court pointed to unemployment in the fishing and related industries as specific injuries resulting from the unilateral determination:

"64. The Applicant further states that in view of the present situation of fisheries in the North Atlantic, which has demanded the establishment of agreed catch-limitations of cod and haddock in various areas, it would not be possible for the fishing effort of United Kingdom vessels displaced from the Icelandic area to be diverted at economic levels to other fishing grounds in the North Atlantic. Given the lack of alternative fishing opportunity, it is further contended, the exclusion of British fishing vessels from the Icelandic area would have very serious adverse consequences, with immediate results for the affected vessels and with damage extending over a wide range of supporting and related industries. It is pointed out in particular that wide-spread unemployment would be caused among all sections of the British fishing industry and in ancillary industries and that certain ports - Hull, Grimsby and Fleetwood - specially reliant on fishing in the Icelandic area, would be seriously affected." 84/

(continued)

interferences in the past. Subsequently, the defendants created new power-stations and plants on Italian territory which, it was alleged, adversely affected the plaintiffs. As a result, the plaintiffs claimed damages for breach of contract in the Court of Nice (France) and obtained judgment in their favour. This decision was affirmed by the Court of Appeal of Aix and by the French Court of Cassation. The plaintiffs now brought an action in the Court of Appeal of Genoa to have the French judgment rendered executory in Italy in accordance with the Franco-Italian Convention of June 3, 1930, for the execution of judgments in commercial matters." (International Law Reports (1938-1940), p. 120)

83/ Ibid., p. 121. Emphasis added.

84/ I.C.J. Reports 1974, p. 28.

The United Kingdom's economic interest receiving protection was historically based:

> "63. In this case, the Applicant has pointed out that its vessels have been fishing in Icelandic waters for centuries and that they have done so in a manner comparable with their present activities for upwards of 50 years. Published statistics indicate that from 1920 onwards, fishing of demersal species by United Kingdom vessels in the disputed area has taken place on a continuous basis from year to year, and that, except for the period of the Second World War, the total catch of those vessels has been remarkably steady. Similar statistics indicate that the waters in question constitute the most important of the Applicant's distant-water fishing grounds for demersal species." 85/

The above quotation may be interpreted as meaning that the Court in this context was referring to the legally protected economic interest of the United Kingdom, an interest that had acquired legal protection based on its historic use. A different interpretation may further be made. References by the Court to historic use by the United Kingdom may be only to establish a fact: the real and genuine dependency of the United Kingdom on fishing from that area where Iceland was imposing its unilateral prescription. The Court may not have been concerned about whether the United Kingdom's dependency on fishing resources was legally protected or not. The Court at the same time noted that the rights and interests of the States were not static concepts but changed with changing economic dependence on the resource:

> "70. This is not to say that the preferential rights of a coastal State in a special situation are a static concept, in the sense that the degree of the coastal State's preference is to be considered as fixed for ever at some given moment. On the contrary, the preferential rights are a function of the exceptional dependence of such a coastal State on the fisheries in adjacent waters and may, therefore, vary as the extent of that dependence changes. Furthermore, as was expressly recognized in the 1961 Exchange of Notes, a coastal State's exceptional dependence on fisheries may relate not only to the livelihood of its people but to its economic development. In each case, it is essentially a matter of appraising the dependence of the coastal State on the fisheries in question in relation to that of the other State concerned and of reconciling them in as equitable a manner as is possible." 86/

The Court requested the parties to negotiate.

156. Harm, for the purpose of impact assessment, must be more than a mere change in the natural situation of resources. Many variables have been taken into account to determine what constitutes harm. Most importantly, it seems that there must be some value deprivation for human beings. The Lake Lanoux Tribunal, in discussing diversion of international waters from one river basin to the next and in response to Spain's claim that any diversion of international waters is, per se, an injury to Spanish interests, noted that mere withdrawal of water is insufficient to base a claim for injury:

85/ Ibid.

86/ Ibid., p. 30.

"8. The prohibition of compensation between the two basins, in spite of equivalence between the water diverted and the water restored, unless the withdrawal of water is agreed to by the other Party, would lead to the prevention in a general way of a withdrawal from a watercourse belonging to River Basin A for the benefit of River Basin B, even if this withdrawal is compensated for by a strictly equivalent restitution effected from a watercourse of River Basin B for the benefit of River Basin A. The Tribunal does not overlook the reality, from the point of view of physical geography, of each river basin, which constitutes, as the Spanish Memorial (at p. 53) maintains, 'a unit'. But this observation does not authorize the absolute consequences that the Spanish argument would draw from it. The unity of a basin is sanctioned at the juridicial level only to the extent that it corresponds to human realities. The water which by nature constitutes a fungible item may be the object of a restitution which does not change its qualities in regard to human needs. A diversion with restitution, such as that envisaged by the French project, does not change a state of affairs organized for the working of the requirements of social life.

"The state of modern technology leads to more and more frequent justifications of the fact that waters used for the production of electric energy should not be returned to their natural course. Water is taken higher and higher up and it is carried even farther, and in so doing it is sometimes diverted to another river basin, in the same State or in another country within the same federation, or even in a third State. Within federations, the judicial decisions have recognized the validity of this last practice (Wyoming v. Colorado ... [259 U.S. 419]) and the instances cited by Dr. J. E. Berber, Die Rechtsquellen des internationalen Wassernützungsrechts, p. 180, and by M. Sauser-Hall, 'L'Utilisation industrielle des fleuves internationaux', [in] Recueil des Cours de l'Académie de Droit international de la Haye, 1953, vol. 83, p. 544; for Switzerland, [see] Recueil des Arrêts du Tribunal Fédéral, vol. 78, Part I, pp. 14 et seq.)." 87/

Nor is it sufficient, as Spain claimed, that the activity may place into the hands of the acting State an instrument giving it a means of violating its international pledges. The Tribunal in Lake Lanoux stated:

"But we must go still further; the growing ascendancy of man over the forces and the secrets of nature has put into his hands instruments which he can use to violate his pledges just as much as for the common good of all; the risk of an evil use has so far not led to subjecting the possession of these means of action to the authorization of the States which may possibly be threatened. Even if we took our stand solely on the ground of neighbourly relations, the political risk alleged by the Spanish Government would not present a more abnormal character than the technical risk which was discussed above. In any case, we do not find either in the Treaty and the Additional Act of May 26, 1866, or in international common law, any rule that forbids one State, acting to safeguard its legitimate interests, to put itself in a

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87/ International Law Reports (1957), pp. 124-125. Emphasis added.

situation which would in fact permit it, in violation of its international pledges, seriously to injure a neighbouring State." 88/

157. The Lake Lanoux Tribunal noted, in addition, that not only may the utilization of international waters by one riparian State not be harmful to the other, but that the utilization may indeed be beneficial to the latter. Not only did France not divert any of Spain's waters to its own uses without restitution, but French use stabilized and equalized the annual water flow:

"Thus, if it is admitted that there is a principle which prohibits the upstream State from altering the waters of a river in such a fashion as seriously to prejudice the downstream State, such a principle would have no application to the present case, because it has been admitted by the Tribunal, in connection with the first question examined above, that the French scheme will not alter the waters of the Carol.

"6. In effect, thanks to the restitution effected by the devices described above, none of the guaranteed users will suffer in his enjoyment of the waters (this is not the subject of any claim founded in Article 9); at the lowest water level, the volume of the surplus waters of the Carol, at the boundary, will at no time suffer a diminution; it may even, by virtue of the minimum guarantee given by France, benefit by an increase in volume assured by the waters of the Ariège flowing naturally to the Atlantic." 89/

158. The Tribunal indeed stated that the claims, as formulated by Spain, could not be proven to have caused injuries. The Tribunal added that pollution, increased temperature, changed chemical composition of the waters or inability to make restitution of water could be considered injuries for the purpose of prior negotiation, and stated that Spain should have argued its position in terms of the actual injuries which might be caused by the French project:

"It could have been argued that the works would bring about an ultimate pollution of the waters of the Carol or that the returned waters would have a chemical composition or a temperature or some other characteristic which could injure Spanish interests. Spain could then have claimed that her rights had been impaired in violation of the Additional Act. Neither in the dossier nor in the pleadings in this case is there any trace of such an allegation.

"It could also have been claimed that, by their technical character, the works envisaged by the French project could not in effect ensure the restitution of a volume of water corresponding to the natural contribution of the Lanoux to the Carol, either because of defects in measuring instruments or in mechanical devices to be used in making the restitution. The question was lightly touched upon in the Spanish Counter Memorial (p. 86), which underlined

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88/ Ibid., p. 126.

89/ Ibid., p. 123.

the 'extraordinary complexity' of procedures for control, their 'very onerous' character, and the 'risk of damage or of negligence in the handling of the watergates, and of obstruction in the tunnel'. But it has never been alleged that the works envisaged present any other character or would entail any other risks than other works of the same kind which today are found all over the world. It has not been clearly affirmed that the proposed works would entail an abnormal risk in neighbourly relations or in the utilization of the waters. As we have seen above, the technical guarantees for the restitution of the waters are as satisfactory as possible. If, despite the precautions that have been taken, the restitution of the waters were to suffer from an accident, such an accident would be only occasional and, according to the two Parties, would not constitute a violation of Article 9." 90/

It is not quite clear whether injuries to "Spanish interests" are meant to apply only to material injuries. But from examples given by the Tribunal, i.e. pollution, chemical composition, temperature, etc., it may be deduced that certain material changes with the potential to cause injuries, whether or not material, may be sufficient to constitute harm for purposes of prior negotiations.

159. Similarly, in suits between federated states, the United States Supreme Court has noted that utilization of the great rivers by the upper riparian may lead to injury to the lower riparian as defined under international law. The Supreme Court set the principle in a suit brought by Kansas seeking to enjoin Colorado from diverting waters from a shared river. Implicitly, the Supreme Court recognized that the diversion would cause harm to Kansas. Kansas averred that:

"the State of Colorado, acting directly herself, as well as through private persons thereto licensed, is depriving and threatening to deprive the State of Kansas and its inhabitants of all the water heretofore accustomed to flow in the Arkansas River through its channel on the surface and through a subterranean course, across the State of Kansas, that this is threatened not only by the impounding, and the use of the water at the river's source, but as it flows after reaching the river ... The injury is asserted to be threatened, and as being sought, in respect of lands ... And it is insisted that Colorado in doing this is violating the fundamental principle that one must use his own so as not to destroy the legal rights of another." 91/

The Supreme Court found the averments sufficient to raise the question of injury:

"Without subjecting the bill to minute criticism, we think its averments sufficient to present the question as to the power of one State of the Union to wholly deprive another of the benefit of water from a river rising in the former and, by nature, flowing into and through the latter, and that therefore, this court, speaking broadly has jurisdiction." 92/

90/ Ibid., pp. 123-124.

91/ Kansas v. Colorado, United States Reports, vol. 185, p. 146.

92/ Ibid., p. 145. Emphasis added.

160. The German Constitutional Court, in rendering a provisional decision concerning the flow of the waters of the Dunabe in Württemberg and Prussia v. Baden, at one point stated that "only considerable interference with natural flow of international rivers can form the basis for claims under international law". 93/ In another passage, the Constitutional Court stated that Württemberg was obligated "to refrain from such interference with the natural distribution of water as damages the interests of Baden to any considerable extent". 94/

161. In an action instituted by the State of Georgia against a private party seeking to restrain the defendant from discharging noxious gas, the United States Supreme Court stated that:

> "It is a fair and reasonable demand on the part of a sovereign that the air over its territory should not be polluted on a great scale by sulphurous acid gas, that the forests on its mountains, be they better or worse, and whatever domestic destruction they have suffered, should not be furthered destroyed or threatened by the act of persons beyond its control, that the crops and orchards on its hills should not be endangered from the same source." 95/

... Supreme Court recognized that in its opinion the defendant so far had shown ...ue diligence" in making efforts to prevent the discharge of noxious gas, but that ...reventive measures had proved to be ineffective and the defendant must come up with different measures. Citing damage to "forests and vegetable life, if not to health, within the plaintiff State" the Court held that, if after allowing a reasonable time to the defendants to complete the structures the fumes were not controlled, an injunction would be issued.

162. Pollution of waters through discharge of sewage has also been recognized by the Supreme Court in Missouri v. Illinois as injury not to be imposed unilaterally. In that case, Missouri alleged that:

> "The result of the threatened discharge would be to send fifteen hundred tons of poisonous filth daily into the Mississippi, to deposit great quantities of the same upon the part of the bed of the last-named river belonging to the plaintiff, and so to poison the water of that river, upon which various of the plaintiff's cities, towns and inhabitants depended as to make it unfit for drinking, agricultural, or manufacturing purposes." 96/

93/ Hackworth, Digest of International Law, vol. 1, p. 598. Emphasis added.

94/ Hackworth, op. cit., pp. 598-599. Emphasis added.

95/ Georgia v. Tennessee Copper Co., United States Reports, vol. 206, p. 238. Emphasis added.

96/ United States Reports, vol. 200, p. 517.

The Supreme Court found the complaint to pose a question of the "first magnitude", namely, "whether the destiny of the great rivers is to be the sewers of the cities along their banks or to be protected against everything which threatens their purity". However, the Supreme Court also noted, as had the arbitrators in Lake Lanoux, that the activity actually benefited rather than injured the target State:

> "We have studied the plaintiff's statement of the facts in detail and have perused the evidence, but it is unnecessary for the purposes of decision to do more than give the general result in a very simple way. At the outset we cannot but be struck by the consideration that if this suit had been brought fifty years ago it almost necessarily would have failed. There is no pretence that there is a nuisance of the simple kind that was known to the older common law. There is nothing which can be detected by the unassisted senses - no visible increase of filth, no new smell. On the contrary, it is proved that the great volume of pure water from Lake Michigan which is mixed with the sewage at the start has improved the Illinois River in these respects to a noticeable extent. Formerly it was sluggish and ill smelling. Now it is a comparatively clear stream to which edible fish have returned. Its water is drunk by the fishermen, it is said, without evil results." 97/

Thus, pollution of shared resources without detriment to the quality of human life or economic interests does not appear to give rise to the duty to negotiate to seek ways to prevent or to minimize injuries.

163. Potential accidental injury has been the subject of prior negotiation between States in the past. For example, in connection with highway construction by Mexico in the Smugglers and Goat Canyons, it was observed that in the Mexican territory the construction would not withstand torrential rains and a request was made on behalf of the United States that negotiations commence between the two States to determine the impact of the construction and to develop remedial plans. The correspondence from the United States stated:

> "It was observed that the highway construction in Mexico extending west from the city of Tijuana and parallel to the boundary, crosses two canyons draining northward into the United States ... and that the crossing over the first canyon, referred to as 'Smugglers Canyon', is being made by an earth fill already up to 60 feet in height without culverts, and that it is understood that the plans for crossing over the second canyon referred to as 'Goat Canyon', provide for similar construction.
>
> "This construction which appears in effect to comprise earth dams across the two canyons without outlet works or spillways, and apparently without impervious cores and therefore subject to failure, could result in flows at the mouths of the canyons at rates greatly exceeding those of natural flows. At the mouths of the canyons in the United States there are residences and properties which would be seriously damaged by such flows.

97/ Ibid., p. 522.

"In view of the aforedescribed situation, I will appreciate an examination of the problem by your Section, and, if the conditions found are as reported to me, that appropriate arrangements be made with the proper authorities in Mexico to take such remedial measures as required to eliminate this threat to interests in my country." 98/

In a subsequent message from the United States to Mexico, it was added that, in the opinion of the United States Government engineers who were closely familiar with the construction, the embankment at Goat Canyon would fail in certain circumstances of flood and that the subsequent modifications by the Mexicans to remedy that problem were not sufficient to ensure its security. The United States therefore urged Mexico to take appropriate steps to prevent the damage to property and the injury to persons that were likely to result from the improper construction of the highway. 99/

164. Similarly, the United States took the initiative in providing for the establishment of a joint office for the eradication of foot-and-mouth disease between the United States and Mexico. That action was in response to the perceived threat of potential injury arising to United States livestock and agriculture from a possible introduction of foot-and-mouth disease from Mexico. A joint office was created between the two Governments to carry out "operations or measures to eradicate, suppress, or control, or to prevent or retard, foot-and-mouth disease, rinderpest, or screw-worm in Mexico" where, it was deemed, such action was necessary to protect the livestock and related industries of the United States. 100/ The joint office consisted of equal numbers of members from both countries; Mexico and the United States also jointly provided for the expenditure of funds to proceed with the operation.

165. Lost future interest has also been recognized as an injury which may give rise to impact assessment. Judge Jessup, in his separate opinion in the North Sea Continental Shelf Case, emphasized that harm possibly resulting from delimitation of the continental shelf and mitigated by the majority decision extended beyond direct, immediate and physical harm to indirect, possible and future harm. 101/

166. Judge Jessup referred not only to wasteful or harmful methods of extraction as a base for negotiation, but also to lost opportunities to exploit resources which may be found in the future, to money wasted in exploratory investigations in areas destined to fall under another State's territorial control and to revenues lost by not having authority to issue concessionary licences. Those revenues include:

98/ M. Whiteman, Digest of International Law, vol. 6, p. 260.

99/ Whiteman, op.cit., vol. 6, p. 261.

100/ Ibid., p. 266.

101/ I.C.J. Reports 1969, p. 79.

"national revenue to be derived from fees, taxes, royalties or profit-sharing, with increases in national productivity, and also with the impact on the national balance of payments if imports of fuels to meet domestic needs are eliminated or reduced by the production of natural gas in the State's portion of the continental shelf." 102/

167. Claim for taking into account non-material injury was made by Australia in the Nuclear Test Case. The claims formulated by the Government of Australia are:

"(i) The right of Australia and its people, in common with other States and their peoples, to be free from atmospheric nuclear weapon tests by any country is and will be violated;

"(ii) The deposit of radio-active fall-out on the territory of Australia's airspace without Australia's consent:

"(a) violates Australian sovereignty over its territory;

"(b) impairs Australia's independent right to determine what acts shall take place within its territory and in particular whether Australia and its people shall be exposed to radiation from artificial sources;

"(iii) The interference with ships and aircraft on the high seas and in the superjacent airspace, and the pollution of the high seas by radio-active fall-out, constitute infringements of the freedom of the high seas;" 103/

Additionally, the Government of Australia alleged that the French nuclear explosions had caused radioactive fall-out on Australian territory and elsewhere in the southern hemisphere and had given rise to a considerable measure of concentrations of radioactives in foodstuffs and in man. Thus the radioactives deposited on Australia were potentially dangerous to that country and its peoples and any injury caused thereby would be irreparable. Australia further claimed that the tests created anxiety and concern among the Australian people and that any effects of the French tests upon the resources of the sea or the conditions of the environment could never be undone and would be irremediable by any payment of damages. 104/

The interim measures award of the Nuclear Tests Cases declined to exclude the possibility that damage to Australia might be shown to be caused by the deposit on Australian territory of radioactive fall-out resulting from such tests. The issue in this case, however, was whether France was allowed to conduct atmospheric nuclear testing. Hence the question of prior consent was not even raised.

102/ Ibid.

103/ Nuclear Tests (Australia v. France), I.C.J. Reports 1973, para. 22.

104/ Nuclear tests, I.C.J. Pleadings, vol. 1, pp. 8-14.

168. It appears that State practice has referred to harm in a variety of forms, as material injury, frustration or deprivation of some legally protected interests, nuisance or the deposit of certain substances, and in most cases by a general reference to the term "damage" itself. In bilateral agreements and a few judicial decisions, references to harm are more precise than those in multilateral agreements. This may be due to the more specific subject matter of bilateral agreements and disputes leading to judicial decisions. Nevertheless, general reference to the term "harm" in State practice is significant. This trend may be explained by difficulties in, first, determining a fixed content for harm which would be relevant to all circumstances and, secondly, by agreeing on a clear and fixed threshold separating tolerable harm from that which may be tolerated only with a prior consent of the injured party. Pinpointing such a threshold is extremely difficult and appears to be a function of policy decision for particular activities, etc. Consequently, it appears that the threshold which separates tolerable injury from that which may be tolerated only with prior consent is fairly flexible. Past precedent appears to demonstrate that there are certain criteria, more or less common to various forms of State practice, which could assist in fixing the threshold between the tolerable injury and that which requires consent. First, the harm should be substantial. Although the term "substantial" itself is ambiguous, it suggests a dividing line which may be determined by examining the local or regional expectations. Secondly, the harm should affect human beings, such as direct personal injury, economic loss, damage to property, etc., or entail indirect material and property losses, such as injury to economic resources of State through substantial injury to its natural resources (fisheries, coastal waters, drinking or irrigation water, etc.). Thirdly, injury may be to legally protected interests. Occasionally injury may be to interests not necessarily having explicit legal protection.

2. Competence to decide what constitutes harm

169. Although in treaties States parties have agreed on the definition of harm, it would not be entirely correct to presume that competence to decide what constitutes harm for the purposes of consultation and negotiation lies with States parties to a dispute. It seems that primary competence to decide what harm is and demand negotiation lies with the injured State or potentially injured State. The competence to decide whether a particular activity requires the consent of the injured State, however, appears to be a shared competence between the acting and the injured State, or the competence of a third party, such as a group of designated consultants, joint commissions, or even an arbitral tribunal.

170. Competence to decide what constitutes harm includes the initial decision on the definition, extent and measure of harm, or the application of those descriptions to a particular factual situation. In most treaties such competence appears to be both prescriptive as well as applicative.

Multilateral agreements

171. Some multilateral agreements have already defined harm and sometimes enumerated harmful activities. Decisions regarding these matters, therefore, have already been taken by the parties to the agreements. Occasionally, some multilateral agreements, in addition to defining harm and harmful activities, have provided for review or final decision regarding the permissibility of an activity to be taken by the appropriate authorities. In some agreements there is explicit or implicit language as to who decides what constitutes harm. In the Convention on the Protection of the Environment between Denmark, Finland, Norway and Sweden for example, a joint authority consisting of representatives of the contracting States makes the decision as to whether a particular activity which is going to be taking place is environmentally harmful. Once such a decision is made, the Joint Authority can institute proceedings in the Court or the Administrative Authority for a decision on the permissibility of the activity. If the Court of the Administrative Authority finds the activity environmentally harmful, the Joint Authority shall inform the supervisory authority of the other State of its opinion. Relevant articles of the Convention provide:

"Article 4

"Each State shall appoint a special authority (supervisory authority) to be entrusted with the task of safeguarding general environmental interests insofar as regards nuisances arising out of environmentally harmful activities in another Contracting State.

"For the purpose of safeguarding such interests, the supervisory authority shall have the right to institute proceedings before or be heard by the competent Court or Administrative Authority of another Contracting State regarding the permissibility of the environmentally harmful activities, if an authority or other representative of general environmental interests in that

State can institute proceedings or be heard in matters of this kind, as well as the right to appeal against the decision of the Court or the Administrative Authority in accordance with the procedures and rules of appeal applicable to such cases in the State concerned.

"Article 5

"If the Court or the Administrative Authority examining the permissibility of environmentally harmful activities (examining authority) finds that the activities entail or may entail nuisance of significance in another Contracting State, the examining authority shall, if proclamation or publication is required in cases of that nature, send as soon as possible a copy of the documents of the case to the supervisory authority of the other State, and afford it the opportunity of giving its opinion. Notification of the date and place of a meeting or inspection shall, where appropriate, be given well in advance to the supervisory authority which, moreover, shall be kept informed of any developments that may be of interest to it."

172. In relation to article 5 the Protocol attached to the Convention provides:

"Article 5 shall be regarded as applying also to applications for permits where such applications are referred to certain authorities and organizations for their opinion but not in conjunction with proclamation or publication procedures."

Articles 6 and 7 of the Convention further provide:

"Article 6

"Upon the request of the supervisory authority, the examining authority shall, insofar as compatible with the procedural rules of the State in which the activities are being carried out, require the applicant for a permit to carry out environmentally harmful activities to submit such additional particulars, drawings and technical specifications as the examining authority deems necessary for evaluating the effects in the other State.

"Article 7

"The supervisory authority, if it finds it necessary on account of public or private interests, shall publish communications from the examining authority in the local newspaper or in some other suitable manner. The supervisory authority shall also institute such investigations of the effects in its own State as it deems necessary."

Article 11 also provides:

"Article 11

"Where the permissibility of environmentally harmful activities which entail or may entail considerable nuisance in another Contracting State is being examined by the Government or by the appropriate Minister or Ministry of the State in which the activities are being carried out, consultations shall take place between the States concerned if the Government of the former State so requests."

Accordingly, the States concerned may resolve differences among themselves concerning the permissibility of environmentally harmful activities which entail or may entail considerable nuisance in other contracting States.

173. An opinion by a commission on the effects of an activity may also be requested. In this respect article 12 provides:

"Article 12

"In cases such as those referred to in Article 11, the Government of each State concerned may demand that an opinion be given by a Commission which, unless otherwise agreed, shall consist of a chairman from another Contracting State to be appointed jointly by the parties and three members from each of the States concerned. Where such a Commission has been appointed, the case cannot be decided upon until the Commission has given its opinion.

"Each State shall remunerate the members it has appointed. Fees or other remuneration of the Chairman as well as any other costs incidental to the activities of the Commission which are not manifestly the responsibility of one or the other State, shall be equally shared by the States concerned."

Where a commission has been appointed, the case, according to article 12, cannot be decided upon until the commission has given its opinion.

174. The Protocol between France, Belgium and Luxembourg to Establish a Tripartite Standing Committee on Polluted Waters provides for a joint technical sub-committee with the following terms of reference:

"(a) to define the pollution factors (industrial or communal origin, degree of intensity, etc.) collect any appropriate technical opinions, assess each State's share of responsibility for the pollution;".

175. Article 9 of the Convention for the Prevention of Marine Pollution from Land-based Sources provides that decisions be made by a joint commission. Under this article, an agreement can be reached among the States concerned in relation to certain polluting substances which are likely to prejudice the interests of other parties to the Convention. The Commission referred to in article 15 of the Convention may also make recommendations for the appropriate resolution of the problem, at the request of any contracting party. The final decision appears to be made by the parties involved.

Article 9 of the agreement provides:

"2. At the request of any Contracting Party concerned, the Commission referred to in Article 15 of the present Convention shall consider the question and may make recommendations with a view to reaching a satisfactory solution.

"3. The special agreements specified in Paragraph 1 of this Article may, among other things, define the areas to which they shall apply, the quality objectives to be achieved, and the methods for achieving these objectives including methods for the application of appropriate standards, and the scientific and technical information to be collected.

"4. The Contracting Parties signatory to these agreements shall, through the medium of the Commission, inform the other Contracting Parties of their purport and of the progress made in putting them into effect."

176. In some conventions the decision maker on what constitutes harm may be either the acting or the injured State. However, such unilateral decision may subsequently be subject to review. For example, the International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, for the purposes of preventive measures, appears to have left the decision as to what constitutes "major harmful consequences" (art. I (1)) to the coastal State. Such decision by the coastal State may eventually be subject to review, if a dispute arises between the coastal and the flag State. Under article VIII of the Convention, any dispute between the parties, if not settled by negotiation, should be settled by conciliation or arbitration. The Party (coastal State) which took the measures shall not refuse a request for conciliation or arbitration. Article VIII provides:

"ARTICLE VIII

"1. Any controversy between the Parties as to whether measures taken under Article I were in contravention of the provisions of the present Convention, to whether compensation is obliged to be paid under Article VI, and to the amount of such compensation shall, if settlement by negotiation between the Parties involved or between the Party which took the measures and the physical or corporate claimants has not been possible, and if the Parties do not otherwise agree, be submitted upon request of any of the Parties concerned to conciliation or, if conciliation does not succeed, to arbitration, as set out in the Annex to the present Convention.

"2. The Party which took the measures shall not be entitled to refuse a request for conciliation or arbitration under provisions of the preceding paragraph solely on the grounds that any remedies under municipal law in its own court have not been exhausted."

Bilateral agreements

177. In some bilateral agreements, it appears that contracting States are competent to decide what constitutes harm for the purposes of prior negotiation and consultation. A treaty between Romania and Yugoslavia 105/ provides that if either party intended to take certain measures on their frontier watercourse in its territory which might injuriously affect any interests in the territory of the other State, it shall obtain the agreement of that State. Article 19 of chapter III of the agreement provides:

"Article 19

"If either State desires to carry out on a watercourse within its territory new works which might injuriously affect any interests in the territory of the other State, such works may be carried out only by agreement between the two States."

The treaty does not define the interests "injuriously" affected. Hence it cannot be assumed that the parties have agreed on the definition of injury. In bilateral agreements concerning all activities with extraterritorial environmental effect, such as the 1983 agreement between the United States and Mexico, 106/ there seems to be no indication in the treaty as to who has the competence to decide what constitutes harm. Since there is an agreement to co-ordinate the co-operation among parties on activities affecting the environment of border areas, it may be assumed under the same spirit of co-operation, decisions as to what constitutes harm will be the result of the consent among the parties. This assumption, however, cannot be supported on the basis of specific provisions of the agreement.

178. A treaty between Belgium and the Netherlands 107/ provides for the competent authorities of both Governments to determine the permissible concentration of chemical substances in the waters of the canal in the vicinity of the Belgian-Netherlands frontier. Article 28 of the agreement provides:

"Article 28

"Pursuant to the provisions of paragraph (I) (d), of annex III to this Treaty, the Belgian and Netherlands Ministers aforesaid shall determine the permissible concentration of chemical substances. The Ministers may by agreement modify the standards of quality set forth in the said annex."

105/ General Convention concerning the hydraulic system concluded between the Kingdom of Romania and the Kingdom of Yugoslavia (14 December 1931).

106/ Agreement between the United States of America and the United Mexican States on Co-operation for the Protection and Improvement of the Environment in the Border Area (14 August 1983).

107/ Treaty between the Kingdom of Belgium and the Kingdom of the Netherlands concerning the improvement of the Terneuzen and Ghent Canal, and the settlement of various matters (20 June 1960).

179. Similarly, article 4 of chapter I of an agreement between Finland and the Soviet Union 108/ provides that both parties, to the extent required, jointly decide upon the standard of quality of water in each frontier watercourse. The article states:

> "The Contracting Parties shall, to the extent required, jointly decide upon the standards of quality to be set for the water in each frontier watercourse or part thereof and shall, in accordance with the procedure laid down in chapter II, co-operate in keeping the quality of the water in frontier watercourses under observation and in taking measures to increase the self-cleansing capacity of the said watercourses."

180. In a treaty, Poland and Czechoslovakia 109/ agreed that they shall jointly agree on the amount of water to be taken from frontier waters for domestic, industrial, etc. use. Article 3 of the agreement provides:

> "Article 3
>
> "(1) Neither Contracting Party may, without the consent of the other Contracting Party, carry out any works in frontier waters which may affect the latter Party's water economy.
>
> "(2) The Contracting Parties shall come to agreement on the amount of water to be taken from frontier waters for domestic, industrial, power generation and agricultural requirements and on the discharge of waste water.
>
> "(3) The Contracting Parties shall come to an agreement in each particular case on what runoff ratios are to be preserved in frontier waters.
>
> "..."

181. In some bilateral agreements a joint commission determines the tolerable or intolerable harm. Article 2, paragraph 2, of an agreement between Romania and Yugoslavia 110/ for example, states that the erection of any new installations and the execution of any new works in the territory of either contracting party, which may change the existing régime of waters, interfere with its free discharge, change its quality or cause flooding on water control systems, shall be referred to the Mixed Commission for examination. The paragraph provides:

108/ Agreement between the Republic of Finland and the Union of Soviet Socialist Republics concerning frontier watercourses (24 April 1964).

109/ Agreement between the Government of the Czechoslovak Republic and the Government of the Polish People's Republic concerning the use of water resources in frontier waters (21 March 1958).

110/ Agreement between the Federal People's Republic of Yugoslavia and the Romanian People's Republic concerning questions of water control on water control systems and watercourses on or intersected by the State frontier, together with the statute of the Yugoslav-Romanian Water Control Commission (7 April 1955).

"Article 2

"2. The erection of any new installations and the execution of any new works, in the territory of either Contracting State, which may change the existing régime of the waters, interfere with the free discharge of the waters where it now exists, change the quality of the waters, or cause flooding on water control systems or watercourses or in valleys or depressions on or intersected by the State frontier shall be referred to the Mixed Commission for examination."

182. Norway and Sweden have established a more elaborate system through which the question of harm may be examined. Under article 16 of an agreement between the two States, 111/ each contracting party may ask the other country for the information necessary to determine what effects a particular measure intended to be carried out by the acting State may have on the other State. The article provides:

"Requests for Information

"Article 16

"Each State may ask the competent authority in the other country for the information necessary to enable it to determine what effects the undertaking will produce in the former country."

Thus each State may require that the question be examined by a commission consisting of two, four or six members, half of whom shall be nominated by each State (art. 17). 112/ The Commission may also ask for expert assistance (art. 18, para. 1). The Commission will also examine applications by non-governmental entities for undertaking activities. Similarly, individuals who are or might be affected by an undertaking are allowed access to the Commission. The parties whose

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111/ Convention between Norway and Sweden on Certain Questions relating to the Law on Watercourses (11 May 1929).

112/ Article 17 states:

"Article 17

"Each State may require that, in order to examine the question, a Commission should be appointed consisting of two, four or six members, half of whom shall be nominated by each State."

rights are affected by the undertaking shall have an opportunity of defending their interests before the Commission (art. 18, para. 2). 113/ The Commission shall give its opinion as to whether the measure should be carried out and in that case it decides on how the work is to be executed with minimum damage and inconvenience as well as how to prevent or minimize the damage to or detrimental effect upon public interests (art. 19, para. 1 (a)). 114/ The Commission shall also decide on the security necessary to be given for fulfilling the stipulated conditions governing

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113/ Article 18 reads:

"Article 18

"1. The Commission shall examine the questions which concern both countries and may for that purpose call in expert assistance. It shall establish its own rules of procedure.

"2. Parties whose rights are affected by the undertaking shall receive at reasonable notice an opportunity of defending their interests before the Commission.

"3. Each State shall fix and pay the remuneration of the members of the commission which it has appointed. The other costs of the Commission shall be paid by the applicant, but shall be advanced by the State which has called for the appointment of the Commission. The applicant may be required to pay an appropriate sum on account or to give security for such costs."

114/ Article 19 states:

"Article 19

"1. The Commission shall give its opinion as to whether the undertaking should be carried out, and in that case shall decide in so far as circumstances require:

"(a) How the work is to be executed so that the object may be attained without excessive cost and with the minimum damage and inconvenience, and also what measures may be considered necessary to prevent or decrease the damage to or detrimental effect upon public interests;

"(b) What rules should be laid down regarding the conservancy and outflow of the water;

"(c) The amount of the charges to be paid and the funds to be deposited in accordance with the provisions of Article 8;

"(d) Whether the arrangements provided for in Article 10 regarding participation in the work should be approved;

the work and for any other obligations which may result therefrom (art. 19, para. 1 (e)). 115/

183. Article 20 116/ of the above agreement also provides that the competent authority to decide whether the consent of the other State is required for an undertaking, and the conditions under which such consent may be given, shall be the King. If such consent is required and if it has been subjected to special conditions, the competent authority to decide whether the measures are permissible is also the King of the country where the work is to be carried out. The authorization for an undertaking is not valid in the other country (the potentially injured State) unless the applicant has obtained a certificate from it

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(continued)

"(e) What security is to be given for fulfilling the stipulated conditions governing the work and for any other obligations which may result therefrom;

"(f) Within what period the work is to be begun and completed;

"(g) For what period the authorisation is to be valid;

"(h) Any other questions concerning the two countries in connection with the work.

"2. When the Commission's enquiry has been concluded, its opinion shall be communicated to both States. Each State may ask the Commission for further information, which shall also be communicated to both States."

115/ Ibid.

116/ Article 20 states:

"Competent Authority to give decisions.

"Article 20.

"The question whether the consent of the other State is required for an undertaking and if so whether such consent should be given and on what conditions, shall be decided by the King. If such consent is required and if it has been subjected to special conditions, the question whether the undertaking is permissible and on what conditions shall also be decided by the King in the country in which the work is to be carried out."

(art. 21). 117/ When authorization for an activity has been granted by the acting State, the applicant must within 180 days obtain from the other State (the potentially injured State) a certificate that authorization has been granted in the manner provided in the agreement, otherwise the undertaking may not be carried out without new authorization (art. 22, para. 1). 118/

117/ Article 21 reads:

"Contents of the authorisation.

"Article 21

"1. Authorisation for an undertaking shall be granted by the competent authority in the country in which it is to be carried out. The authorisation shall contain not only the conditions stipulated by that State but also any conditions which may have been submitted for the other State's approval in accordance with Article 13. The authorisation shall further stipulate that it is not valid in the other country unless the applicant has obtained the certificate mentioned in Article 22 from the competent authority of that country.

"2. When the final decision has been reached by the State in which the undertaking is to be carried out, a copy thereof shall be transmitted to the other State at the same time as the decision is sent to the applicant." [Emphasis added.]

118/ Article 22 provides:

"Legal effect of the authorisation in the other country.

"Article 22

"1. When authorisation for an undertaking has been granted and has acquired legal effect, the applicant must within 180 days obtain from the competent authority in the other country a certificate that authorisation has been granted in the manner provided for in this Convention. If the certificate is not applied for within the above-mentioned period, the undertaking may not be carried out without fresh authorisation.

"2. If a waterfall, immovable property or transport or floating interest on account of which authorisation for an undertaking has been granted belongs to the other country, the certificate may not be issued unless a decision has been taken regarding the regulations to be established under Article 3, paragraph 2.

"3. When such a certificate has been issued, any inhabitant of the country shall be obliged, always subject to compliance with the laws of the country and provided he receives compensation therefor, to give up the such immovable property as may be required and to submit to any servitude upon it and tolerate any damage or nuisance caused by the undertaking."

184. A Frontier Water Commission is competent to decide on authorization for certain activities on the joint waters between Germany and Denmark. 119/ Article 30 of the Agreement between the two States provides:

> "The necessary drawings and explanations shall be attached to all applications for the erection of new works or the alteration of existing works in accordance with Article 29. Applications shall be laid before the head district official or head county official concerned whose duty it is to submit them to the Frontier Water Commission, subject, if necessary, to the provisions of suitable security for the costs.
>
> "If the Frontier Water Commission is definitely of opinion that a proposal should not be adopted, it may at once reject such proposal by means of a decision in which the reasons for the rejection are given.
>
> "In other cases the proposed use of the watercourse shall be brought to the notice of the public in the manner which is customary in the locality in all Communes or manorial districts (Gutsbezirke), the land of which might be affected by the operation of the works in the event of their being authorised.
>
> "Further, the attention of all persons who will clearly suffer damage from the authorisation of the works shall be drawn to the public notification by means of registered letters."

185. For the disposal of radioactive materials within the potentially injured State from an operation carried out in that territory by the acting State, prior permission of the potentially injured State appears to be required. Article V, paragraphs (b) and (c) of an agreement between Italy and the United States 120/ regarding the use of Italian ports by the United States nuclear ship Savannah

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119/ Agreement for the Settlement of Question Relating to Watercourses and Dikes on the German-Danish Frontier (10 April 1922).

120/ Agreement between the Government of the United States of America and the Government of Italy on the Use of Italian Ports by the N.S. Savannah (23 November 1964). Article V, paragraphs (b) and (c) state:

> "(b) Disposal of radioactive liquid or solid substances within Italian territorial waters and ports shall take place from the Ship only with the specific prior approval of competent Italian authorities.
>
> "(c) Release of any radioactive gaseous substances from the Ship while within Italian territorial waters and ports shall be at or below permissible levels as specified by competent Italian authorities. Disposal or release of any radioactive gaseous substances within Italian territorial waters and ports which exceed such permissible levels shall be subject to prior approval of competent Italian authorities."

requires prior approval of the Italian authorities for disposal of radioactive materials from the ship in Italian territory. A similar provision (art. 20) is incorporated in an agreement between the Netherlands and the United States 121/ for the same reason.

121/ Operational Agreement on Arrangements for a Visit of the N.S. Savannah to the Netherlands (20 May 1963). Article 20 reads:

"Radioactive waste

"Article 20

"The Government of the United States shall ensure that gaseous, liquid or solid radioactive waste shall remain on board the Ship in accordance with the Operating Manual while the Ship is in Netherlands waters or in the port area of Rotterdam unless the express prior approval of the authorities assigned therefor by the Netherlands Government has been obtained for the disposal of said waste."

Judicial decisions and State practice other than agreements

186. Judicial decisions and official correspondence have recognized that States may unilaterally determine or assess the harm likely to result from activities undertaken by them or within their territories when information about the activity is uniquely within the knowledge of the acting State. For example, in Corfu Channel, the imposition of an obligation to notify shipping authorities about the existence of minefields in Albanian territorial waters (an international strait) may be interpreted as implicitly recognizing Albania's initial duty to unilaterally decide what constitutes harm requiring notification. The Court noted that Albania had exclusive control of the area. 122/ Of course, here the competence to define injury for the purpose of notification should be distinguished from the competence to apply that definition to a particular factual situation. It appears from the opinion that the Court considered Albania as having the competence to recognize that laying mines in its waters under its jurisdiction was bound to cause material injuries to the British ships passing through and that Albania should have taken action such as informing the British of the existence of the mines. It appears from the opinion that even the competence to apply a particular definition of injury to a particular situation is not discretionary. On the contrary, it is obligatory and in the absence of a proper performance of this competence, the State is liable for the injuries it may have caused.

187. Likewise, the United States Supreme Court in United States v. Arjona stated that with respect to counterfeiting, it is the duty of the State in whose territory an injurious activity is taking place to decide what constitutes harm and take appropriate steps to prevent injury. Here also the competence to decide implies a duty to apply measures to assess injury to a particular activity:

> "The law of nations requires every national government to use 'due diligence' to prevent a wrong being done within its own dominion to another nation with which it is at peace, or to the people thereof; and because of this the obligation of one nation to punish those who within its own jurisdiction counterfeit the money of another nation has long been recognized." 123/

188. The Supreme Court further stated that the United States has the power and that it is its duty to prevent and punish the counterfeiting, within its jurisdiction, of the money of another nation:

> "It was incumbent on the United States as a Nation to use due diligence to prevent any injury to another nation or its people by counterfeiting its money, or its public or quasi public securities." 124/

122/ I.C.J. Reports 1949, p. 18.

123/ United States Reports, vol. 120, p. 484.

124/ Ibid., p. 489. Emphasis added.

189. The notions of necessity of inter-State relationships, comity and reciprocity underlay the decisions requiring States to unilaterally assess harm and to take preventative measures. The framework of these notions was illustrated by the United States Supreme Court in United States v. Arjona, regarding the power and the duty of the United States Government to prevent and punish the counterfeiting within its jurisdiction of the notes, bonds and other securities issued by foreign Governments or under their authority. The Court stated:

> "Any uncertainty about the genuineness of the security necessarily depreciates its value as a merchantable commodity, and against this international comity requires that national protection shall, as far as possible, be afforded. If there is neglect in that, the United States may, with propriety, call on the proper government to provide for the punishment of such an offence, and thus secure the restraining influences of a fear of the consequences of wrong doing. A refusal may not, perhaps, furnish sufficient cause for war, but would certainly give just ground of complaint, and thus disturb that harmony between the Governments which each is bound to cultivate and promote.
>
> "But if the United States can require this of another, that other may require it of them, because international obligations are of necessity reciprocal in their nature. The right, if it exists at all, is given by the law of nations, and what is law for one is, under the same circumstances, law for the other." 125/

Within this context the Supreme Court also recognized the competence of the injured State to inform the acting State that a particular activity taking place within its jurisdiction and control had caused or might cause injury to it. After elaborating on the importance of genuineness of the United States Security Notes to its economy, the Court stated that when there is a counterfeiting of the United States Security Notes abroad, the United States Government has the right to call on the proper Government to ask for protection:

> "If there is neglect in that, [protecting the United States Security Notes against counterfeiting] the United States may, with propriety, call on the proper Government to provide for the punishment of such an offense, and thus secure the restraining influences of a fear of the consequences of wrongdoing. A refusal [from the acting State] may not, perhaps, furnish sufficient cause for war, but it would certainly give just ground of complaint ..." 126/

190. Unilateral determination of tolerable or intolerable injuries has also been made by the acting State where the activity or its serious and harmful consequences occur in the shared domain. The United States and the United Kingdom in the

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125/ Ibid., p. 487. Emphasis added.

126/ Ibid.

Eniwetok Atoll and Christmas Island nuclear tests respectively, unilaterally assessed the possible injuries that the tests might cause to other States and their subjects. Prior to the conduct of the 1958 nuclear testing in the Pacific Ocean, the United States Government, after examining the area which could be affected by their nuclear test, established a "danger area" and informed the Japanese Government as well as other States and vessels who were planning to pass through that area. Similarly, the British Government, after examining the extent of the area which could be affected by their nuclear test, established a "danger area" on the high seas around the Christmas Island for its first H-bomb tests on 7 January 1957. It may be assumed that the United States and the British Governments made a unilateral decision regarding the intolerable injuries which might be caused by their activities within the "danger area". Despite claims by the Government of Japan that the tests would also have a devastating impact on Japanese interests outside the "danger area", the acting States assessed the impact on Japanese interests as inferior to the interest of the "free world" in security from nuclear war. 127/

191. In at least one incident the acting State assured the injured State that it would comply with the domestic laws of the latter about the standards of tolerable injury. When there was a serious possibility of bad pollution originating from a plant to be built in Lorraine in France near the border of the Federal Republic of Germany, the local authorities of Lorraine gave assurances to their German counterparts that the plant would comply with German emission standards, and ordered the plant to do so. 128/ In this case, the competence for definition of harm appears to have been that of the injured State and the acting State had the applicative competence.

192. The question of the observance by the acting State of the standard of pollution of the injured State was touched upon by the United States Supreme Court in an interstate water pollution case. In Illinois v. Milwaukee 129/ the Supreme Court, in stressing the importance of reaching an equitable solution, stated that the high standards of prevention of pollution of the neighbouring State should also be taken into account, in addition to the requirements of the federal law:

> "while federal law governs, consideration of State standards may be relevant ... Thus, a State with high water-quality standards may well ask that its strict standards be honored and that it not be compelled to lower itself to the more degrading standards of a neighbour." 130/

127/ Whiteman, Digest of International Law, vol. 4, pp. 586, 599 and 600.

128/ International Environment Report, vol. 3, No. 9 (10 September 1980) cited in Bothe "International legal problems of industrial siting in border areas and national environment policies" in the Organization of Economic Co-operation and Development, Transfrontier Pollution and the Role of States, 1981, p. 88, note 42.

129/ United States Reports, vol. 406, p. 91.

130/ Ibid., p. 107.

193. In Lake Lanoux, the Tribunal held that States are obligated to enter into negotiations with other interested States before commencing industrial utilization of international rivers. Both States have interests which must be taken into consideration:

> "France is entitled to exercise her rights; she cannot ignore Spanish interests.
>
> "Spain is entitled to demand that her rights be respected and her interests be taken into consideration." 131/

In addition, the Tribunal stated that while the upstream State has the right to give preference to its own scheme, it has the duty to examine schemes also proposed by the downstream State:

> "As a matter of form, the upstream State has, procedurally, a right of initiative; it is not obliged to associate the downstream State in the elaboration of its schemes. If, in the course of discussions, the downstream State submits schemes to it, the upstream State must examine them, but it has the right to give preference to the solution contained in its own scheme provided that it takes into consideration in a reasonable manner the interests of the downstream State.
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> "24. In the case of Lake Lanoux, France has maintained to the end the solution which consists in diverting the waters of the Carol to the Ariège with full restitution. By making this choice France is only making use of a right; the development works of Lake Lanoux are on French territory, the financing of and responsibility for the enterprise fall upon France, and France alone is the judge of works of public utility which are to be executed on her own territory, save for the provisions of Articles 9 and 10 of the Additional Act, which, however, the French scheme does not infringe.
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> "On her side, Spain cannot invoke a right to insist on a development of Lake Lanoux based on the needs of Spanish agriculture. In effect, if France were to renounce all of the works envisaged on her territory, Spain could not demand that other works in conformity with her wishes should be carried out. Therefore, she can only urge her interests in order to obtain, within the framework of the scheme decided upon by France, terms which reasonably safeguard them." 131/

However, should no agreement occur, the States have the option of seeking third-party decision-making:

131/ International Law Reports (1957), p. 140.

"It is for each State to evaluate in a reasonable manner and in good faith the situations and the rules which will involve it in controversies; its evaluation may be in contradiction with that of another State; in that case, should a dispute arise the Parties normally seek to resolve it by negotiation or, one of them is never obliged to suspend the exercise of its jurisdiction because of the dispute except when it assumes an obligation to do so; by exercising its jurisdiction it takes the risk of seeing its international responsibility called into question if it is established that it did not act within the limits of its rights. The commencement of arbitral proceedings in the present case illustrates perfectly these rules in the functioning of the obligations subscribed to by Spain and France in the Arbitration Treaty of July 10, 1929." 132/

194. For the distribution of shared resources or the delimitation of territorial control over what has been traditionally regarded as the shared domain, the decisions recognize negotiation rather than unilateral determination as the most appropriate method. Negotiation was required by the Court in distributing fish resources in the Fisheries Jurisdiction Case, in delimiting the continental shelf in the North Sea Continental Shelf Cases and sea areas in the Anglo-Norwegian Fisheries Case.

195. Third-party decision-making has also been recognized as appropriate to determine harm in extraterritorial injuries. The Trail Smelter Tribunal appointed a panel of technical consultants to assess the injurious impact of smelting activities within British Columbia to the State of Washington. The consultants were only one aspect of a complex temporary régime established to conduct experiments and collect data:

"To enable it to establish a permanent régime based on the more adequate and intensive study and knowledge above referred to, the Tribunal established the following temporary régime.

"(1) For the purpose of administering an experimental period, to continue to a date not later than October 1, 1940, the Tribunal will appoint two Technical Consultants, and in case of vacancy will appoint the successor. Such Technical Consultants to be appointed in the first place shall be Reginald S. Dean and Robert E. Swain, and they shall cease to act as Advisers to the Tribunal under the Convention during such trial period.

"(2) The Tribunal directs that, before May 1, 1938, a consulting meteorologist, adequately trained in the installation and operation of the necessary type of equipment, be employed by the Trail Smelter, the appointment to be subject to the approval of the Technical Consultants. The Tribunal directs that, beginning May 1, 1938, such meteorological observations as may be deemed necessary by the Technical Consultants shall be made, under their direction, by the meteorologist, the scientific staff of the Trail Smelter, or otherwise. The purpose of such observations shall be to determine, by means

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132/ Ibid., p. 132.

of captive balloons and otherwise, the weather conditions and the height, velocity, temperature, and other characteristics of the gas-carrying and other air currents and of the gas emissions from the stacks." 133/

196. The tribunal determined what types of experiments were to be conducted, how and when:

"(3) The Tribunal further directs that beginning May 1, 1938, there shall be installed and put in operation and maintained by the Trail Smelter, for the purpose of providing information which can be used in determining present and prospective wind and other atmospheric conditions, and in making a prompt application of those observations to the control of the Trail Smelter plant operation:

"(a) Such observation stations as the Technical Consultants deem necessary.

"(b) Such equipment at the stacks as the Technical Consultants may find necessary to give adequate information of gas conditions and in connection with the stacks and stack effluents.

"(c) Sulphur dioxide recorders, stationary and portable (the stationary recorders not to exceed three in number)." 134/

thin this régime the decision makers were given discretion to modify their instructions:

"(d) The Technical Consultants shall have the direction of and authority over the location in both the United States and the Dominion of Canada, and over the installation, maintenance and operation of all apparatus provided for in Paragraph 2 and Paragraph 3. They may require from the meteorologist and from the Trail Smelter regular reports as to the operation of all such apparatus.

"(e) The Technical Consultants may require regular reports from the Trail Smelter as to the methods of operation of its plant in such form and at such times as they shall direct; and the Trail Smelter shall conduct its smelting operations in conformity with the directions of the Technical Consultants and of the Tribunal, based on the result of the data obtained during the period hereinafter named; and the Technical Consultants and the Tribunal may change or modify at any time its or their instructions as to such operations.

"(f) It is the intent and purpose of the Tribunal that the administration of the observations, experiments, and operations above provided for shall be as flexible as possible, and subject to change or modification by the

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133/ United Nations, Reports of International Arbitral Awards, vol. III, pp. 1934-1935. Emphasis added.

134/ Ibid., p. 1935.

Technical Consultants and by the Tribunal, to the end that conditions as they at any time may exist, may be changed as circumstances require.

"(4) The Technical Consultants shall make report to the Tribunal at such dates and in such manner as it shall prescribe as to the results obtained and conclusions formed from the observations, experiments, and operations above provided for.

"(5) The observations, experiments, and operations above provided for shall continue on a trial basis through the remainder of the crop-growing season of 1938, the crop-growing seasons of 1939 and 1940, and the winter seasons of 1938-1939 and 1939-1940 and until October 1, 1940, unless the Tribunal shall find it practicable or necessary to terminate such trial period at an earlier date.

"(6) At the end of the trial period above provided for, or at the end of such shorter trial period as the Tribunal may find to be practicable or necessary, the Tribunal in a final decision will determine upon a permanent régime and upon the indemnity and compensation, if any, to be paid under the Convention. Such final decision, under the agreements for extension, heretofore entered into by the two Governments under Article XI of the Convention, shall be reported to the Governments within three months after the date of the end of the trial period.

"(7) The Tribunal shall meet at least once in the year 1939, to consider reports and to take such action as it may deem necessary.

"(8) In case of disagreement between the Technical Consultants, they shall refer the matter to the Tribunal for its decision, and all persons and the Trail Smelter affected hereunder shall act in conformity with such decision." 135/

The régime was financed by the acting State:

"(10) For the carrying out of the temporary régime herein prescribed by the Tribunal, the Dominion of Canada shall undertake to provide for the payment of the following expenses thereof: (a) the Tribunal will fix the compensation of the Technical Consultants and of such clerical or other assistants as it may find necessary to employ; (b) statements of account shall be rendered by the Technical Consultants to the Tribunal and approved by the Chairman in writing; (c) the Dominion of Canada shall deposit to the credit of the Tribunal from time to time in a financial institution to be designated by the Chairman of the Tribunal, such sums as the Tribunal may find to be necessary for the payment of the compensation, travel, and other expenses of the Technical Consultants and of the clerical or other assistants; (d) written report will be made by the Tribunal to the Dominion of Canada of all the sums received and expended by it, and any sum not expended shall be refunded by the Tribunal to the Dominion of Canada at the conclusion of the trial period." 135/

135/ Ibid., pp. 1935-1936..

C. Balancing interests

197. An important element in the process of impact assessment is accommodating the interests of the parties involved with the common interest of the larger community. Balancing interests appears to have been an integral part of treaties and is referred to in judicial decisions and official correspondence about activities with potential harmful impact. The concept of balancing interests in terms of "cost-benefit analysis" in torts law relates to balancing economic and financial interests and factors involved in a tortious act. In international relations, treaties and judicial decisions, the concept of balancing interests appears to have a broader meaning; it includes some other values in addition to economic factors, such as the well-being and health of populations, respect for territorial sovereignty and integrity of other States, safety and security of neighbouring States, etc.

198. Before reviewing treaties and other forms of State practice dealing with the concept of balancing interests, two points should be made. First, the initial step in balancing interests is to determine what interests each State or the larger community has which should be balanced; secondly, whether these interests are violent, what is the value to be attached to each interest and how they are to be compared with one another. These difficulties arise to some extent in treaties, but they arise more sharply in judicial decisions.

Multilateral agreements

199. The concept of balancing interests has to some extent been developed in the Convention for the Prevention of Marine Pollution from Land-based Sources and the Convention on the Protection of the Marine Environment of the Baltic Sea area. Regulations enumerated in annex V of the former Convention are clear attempts to balance the interests involved and analyze costs and benefits to different parties under various alternatives. Regulations evaluate substances which may be dumped at sea, the location of dumping, conditions of dumping, possible effects of such substances on, for example, marine life, fish stocks and other uses of the sea, etc. The latter Convention has made a similar attempt at balancing interests in annex III where it enumerates the factors to be considered in establishing criteria governing the issue of permits for the dumping of substances at sea. These two Conventions are primarily concerned with shared domains; consequently, common interests of the larger community of coastal States are more predominant. Attempts are made in the Conventions to accommodate such common interest with the interests of individual States. The Vienna Convention on Civil Liability for Nuclear Damage, in balancing interests, introduces a concept which may be called risk exclusion. Accordingly, when the risks involved in some activities are minimal, they are exempt from certain rules, without of course affecting the question of liability in case of injury. Article I (1) (k) (2) of the Convention provides:

> "...
>
> "An Installation State may, if the small extent of the risks involved so warrants, exclude any small quantities of nuclear material from the application of this Convention, provided that -

"(a) maximum limits for the exlusion of such quantities have been established by the Board of Governors of the International Atomic Energy Agency; and

"(b) any exclusion by an Installation State is within such established limits.

"The maximum limits shall be reviewed periodically by the Board of Governors.

"..."

200. In other Conventions dealing with the interests of two or more States immediately affected by certain activities, balancing interests focuses primarily on the interests of the States immediately involved. Article 2 of the Convention on the Protection of the Environment between Denmark, Finland, Norway and Sweden clearly shows such a turn of emphasis:

"Article 2

"In considering the permissibility of environmentally harmful activities, the nuisance which such activities entail or may entail in another Contracting State shall be equated with a nuisance in the State where the activities are carried out."

Articles 6, 7 and 12 of the Convention further provide for methods to be utilized in order to balance the interests of the parties more effectively. Under article 6, the supervisory authority may request the examining authority to require, in so far as is compatible with the procedural rules of the State where the activities are being carried out, that the acting entity submit such additional information as the examining authority deems necessary for evaluating the effects in the other State. Article 7 empowers the supervisory authority, if it finds it necessary on account of public or private interests, to publish communications from the examining authority in the local newspaper or to publicize them in some other suitable manner. The supervisory authority, under article 7, is also required to institute investigations of the effects in its own State as it deems necessary. This is, of course, to protect the public or private interests within the State in whose territory the activities are taking place. Nevertheless, under article 12, the Government of each State concerned may demand that an opinion be given by a Commission concerning the permissibility of environmentally harmful activities which entail or may entail considerable nuisance in another State. The Commission, unless otherwise agreed, shall consist of a chairman from a third contracting State to be appointed jointly by the parties and three members from each of the States concerned. The case cannot be decided upon until the Commission has given its opinion.

201. The concept of balancing interests has also been incorporated in the Protocol between France, Belgium and Luxembourg to Establish a Tripartite Standing Committee on Polluted Waters. The Protocol provides for a joint technical sub-committee with the function of defining the polluting factors, collecting any appropriate

technical opinions and assessing each State's share of responsibility for the pollution.

202. The physical and technical capacity of States in preventing harm through their activities have also been regarded as elements affecting the balancing of interests. This does not necessarily mean granting permission to carry out harmful activities, but rather providing technical assistance to such countries to prevent or minimize harm. Article 202 of the Convention on the Law of the Sea provides for such technical assistance:

"Article 202

"Scientific and technical assistance to developing States

"States shall, directly or through competent international organizations:

"(a) promote programmes of scientific, educational, technical and other assistance to developing States for the protection and preservation of the marine environment and the prevention, reduction and control of marine pollution. Such assistance shall include, inter alia:

"(i) training of their scientific and technical personnel;

"(ii) facilitating their participation in relevant international programmes;

"(iii) supplying them with necessary equipment and facilities;

"(iv) enhancing their capacity to manufacture such equipment;

"(v) developing facilities for and advice on research, monitoring, educational and other programmes;

"(b) provide appropriate assistance, especially to developing States, for the minimization of the effects of major incidents which may cause serious pollution of the marine environment;

"(c) provide appropriate assistance, especially to developing States, concerning the preparation of environmental assessments."

At least one convention has specifically granted preferential treatment to developing countries in balancing interests. Article 203 of the Convention on the Law of the Sea enumerates preferential treatment for developing States, as follows:

"Article 203

"Preferential treatment for developing States

"Developing States shall, for the purposes of prevention, reduction and control of pollution of the marine environment or minimization of its effects, be granted preference by international orgnizations in:

"(a) the allocation of appropriate funds and technical assistance; and

"(b) the utilization of their specialized services."

The preferential treatments do not relax the requirements of minimizing and preventing injuries. They give priorities to developing countries in terms of allocation of funds and services by international organizations.

203. In balancing interests, the Convention has also incorporated in article 193 the principle of the sovereign right of States to exploit their natural resources. Thus it attempts to reconcile the principle of State sovereignty with that of international concern for protection of the marine environment. Article 193 states:

"Article 193

"Sovereign right of States to exploit their natural resources

"States have the sovereign right to exploit their natural resources pursuant to their environmental policies and in accordance with their duty to protect and preserve the marine environment."

This article, however, does not provide a more detailed formula or guidelines as to how the two competing principles and interests should be reconciled and which one prevails in case of conflict.

204. The Convention on the Law of the Sea, in defining the exclusive economic zone, has granted certain rights to and imposed duties on coastal States. The coastal States are obligated, in most cases, unilaterally to take into account the rights of other States in undertaking activities within their own economic zone. By reference to "rights" it appears that those legally protected interests have already been determined either by treaty or under international law. The coastal State competence is only to identify them in a particular factual situation. Article 56 provides for the sovereign rights and jurisdiction of the coastal State over the establishment and use of artificial islands, installations and structures, marine scientific research and the protection and preservation of the marine environment. This article then provides that, in exercising its rights in the exclusive economic zone, the coastal State shall have due regard to the rights and duties of other States:

"Article 56

"Rights, jurisdiction and duties of the coastal State in the exclusive economic zone

"1. In the exclusive economic zone, the coastal State has:

"(a) sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the sea-bed and subsoil and the superjacent waters, and with regard to other activities for the economic exploitation and exploration of the zone, such as the production of energy from the water, currents and winds;

"(b) jurisdiction as provided for in the relevant provisions of this Convention with regard to:

"(i) the establishment and use of artificial islands, installations and structure;

"(ii) marine scientific research;

"(iii) the protection and preservation of the marine environment;

"(c) other rights and duties provided for in this Convention.

"2. In exercising its rights and performing its duties under this Convention in the exclusive economic zone, the coastal State shall have due regard to the rights and duties of other States and shall act in a manner compatible with the provisions of this Convention.

"3. The rights set out in this article with respect to the sea-bed and subsoil shall be exercised in accordance with Part VI."

Also article 58 of the Convention, which provides freedom of navigation and overflight, the laying of submarine cables and pipelines and other internationally lawful uses of the sea related to those freedoms for all States within the exclusive economic zone, obligates the States to have due regard to the rights and duties of the coastal State, as follows:

"Article 58

"Rights and duties of other States in the exclusive economic zone

"1. In the exclusive economic zone, all States, whether coastal or land-locked, enjoy, subject to the relevant provisions of this Convention, the freedoms referred to in article 87 of navigation and overflight and of the laying of submarine cables and pipelines, and other internationally lawful uses of the sea related to these freedoms, such as those associated with the operation of ships, aircraft and submarine cables and pipelines, and compatible with the other provisions of this Convention.

"2. Articles 88 to 115 and other pertinent rules of international law apply to the exclusive economic zone in so far as they are not incompatible with this Part.

"3. In exercising their rights and performing their duties under this Convention in the exclusive economic zone, States shall have due regard to the rights and duties of the coastal State and shall comply with the laws and regulations adopted by the coastal State in accordance with the provisions of this Convention and other rules of international law in so far as they are not incompatible with this Part."

205. Further, article 59 of the Convention provides that in circumstances where the Convention does not attribute rights or jurisdiction to the coastal State or to

other States within the exclusive economic zone, and a conflict arises, the States involved shall resolve the conflict on the basis of equity, taking into account the importance of the interests of the parties involved as well as the interest of the larger community. The article provides:

"Article 59

"Basis for the resolution of conflicts regarding the attribution of rights and jurisdiction in the exclusive economic zone

"In cases where this Convention does not attribute rights or jurisdiction to the coastal State or to other States within the exclusive economic zone, and a conflict arises between the interests of the coastal State and any other State or States, the conflict should be resolved on the basis of equity and in the light of all the relevant circumstances, taking into account the respective importance of the interests involved to the parties as well as to the international community as a whole."

In this article reference is made to "interests" and not "rights". This broad language poses some of the difficulties stated at the beginning of this section, namely, what those interests are and how they are to be evaluated in comparison with the interests of the acting State.

206. Attempts to balance and accommodate interests have also been made in articles 60 and 61 of the Convention on the Law of the Sea. Article 60, for example, grants competence to the coastal State to establish inter alia artificial islands and other structures, while stating that such installations and the safety zones around them may not be established where they could interfere with the use of recognized sea lanes essential to international navigation. The article provides:

"Article 60

"Artificial islands, installations and structures in the exclusive economic zone

"1. In the exclusive economic zone, the coastal State shall have the exclusive right to construct and to authorize and regulate the construction, operation and use of:

"(a) artificial islands;

"(b) installations and structures for the purposes provided for in article 56 and other economic purposes;

"(c) installations and structures which may interfere with the exercise of the rights of the coastal State in the zone.

"2. . The coastal State shall have exclusive jurisdiction over such artificial islands, installations and structures, including jurisdiction with regard to customs, fiscal, health, safety and immigration laws and regulations.

"3. Due notice must be given of the construction of such artificial islands, installations or structures, and permanent means for giving warning of their presence must be maintained. Any installations or structures which are abandoned or disused must be entirely removed.

"4. The coastal State may, where necessary, establish reasonable safety zones around such artificial islands, installations and structures in which it may take appropriate measures to ensure the safety both of navigation and of the artificial islands, installations and structures.

"5. The breadth of the safety zones shall be determined by the coastal State, taking into account applicable international standards. Such zones shall be designed to ensure that they are reasonably related to the nature and function of the artificial islands, installations or structures, and shall not exceed a distance of 500 metres around them, measured from each point of their outer edge, except as authorized by generally accepted international standards or as recommended by the competent international organization. Due notice shall be given of the extent of safety zones.

"6. All ships must respect these safety zones and shall comply with generally accepted international standards regarding navigation in the vicinity of artificial islands, installations, structures and safety zones.

"7. Artificial islands, installations and structures and the safety zones round them may not be established where interference may be caused to the use of recognized sea lanes essential to international navigation.

"8. Artificial islands, installations and structures do not possess the status of islands. They have no territorial sea of their own, and their presence does not affect the delimitation of the territorial sea, the exclusive economic zone or the continental shelf."

207. Similarly, article 61 grants competence to coastal States to establish policies and programmes for the catch of the living resources in their exclusive economic zone. However, the article indicates that in establishing such policies, the coastal State shall take into account certain factors, including the economic needs of coastal fishing countries and the special requirements of developing countries. The article provides:

"Article 61

"Conservation of the living resources

"1. The coastal State shall determine the allowable catch of the living resources in its exclusive economic zone.

"2. The coastal State, taking into account the best scientific evidence available to it, shall ensure through proper conservation and management measures that the maintenance of the living resources in the exclusive economic zone is not endangered by over-exploitation. As appropriate, the coastal State and competent international organizations, whether subregional, regional or global, shall co-operate to this end.

"3. Such measures shall also be designed to maintain or restore populations of harvested species at levels which can produce the maximum sustainable yield, as qualified by relevant environmental and economic factors, including the economic needs of coastal fishing communities and the special requirements of developing States, and taking into account fishing patterns, the interdependence of stocks and any generally recommended international minimum standards, whether subregional, regional or global.

"4. In taking such measures the coastal State shall take into consideration the effects on species associated with or dependent upon harvested species with a view to maintaining or restoring populations of such associated or dependent species above levels at which their reproduction may become seriously threatened.

"5. Available scientific information, catch and fishing effort statistics, and other data relevant to the conservation of fish stocks shall be contributed and exchanged on a regular basis through competent international organizations, whether subregional, regional or global, where appropriate and with participation by all States concerned, including States whose nationals are allowed to fish in the exclusive economic zone."

208. In relation to the utilization of the living resources in the exclusive economic zone, the Convention provides that the coastal State take into account the requirements of developing States in the region or subregion. It also provides that the coastal States, in order to minimize negative economic impact of their activities upon States whose nationals have habitually fished in the zone, shall take certain steps in this regard. Article 62 provides:

"Article 62

"Utilization of the living resources

"1. The coastal State shall promote the objective of optimum utilization of the living resources in the exclusive economic zone without prejudice to article 61.

"2. The coastal State shall determine its capacity to harvest the living resources of the exclusive economic zone. Where the coastal State does not have the capacity to harvest the entire allowable catch, it shall, through agreements or other arrangements and pursuant to the terms, conditions, laws and regulations referred to in paragraph 4, give other States access to the surplus of the allowable catch, having particular regard to the provisions of articles 69 and 70, especially in relation to the developing States mentioned therein.

"3. In giving access to other States to its exclusive economic zone under this article, the coastal State shall take into account all relevant factors, including, inter alia, the significance of the living resources of the area to the economy of the coastal State concerned and its other national interests, the provisions of articles 69 and 70, the requirements of developing States in the subregion or region in harvesting part of the surplus and the need to minimize economic dislocation in States whose nationals have

habitually fished in the zone or which have made substantial efforts in research and identification of stocks.

"4. Nationals of other States fishing in the exclusive economic zone shall comply with the conservation measures and with the other terms and conditions established in the laws and regulations of the coastal State. These laws and regulations shall be consistent with this Convention and may relate, inter alia, to the following:

"(a) licensing of fishermen, fishing vessels and equipment, including payment of fees and other forms of remuneration, which, in the case of developing coastal States, may consist of adequate compensation in the field of financing, equipment and technology relating to the fishing industry;

"(b) determining the species which may be caught, and fixing quotas of catch, whether in relation to particular stocks or groups of stocks or catch per vessel over a period of time or to the catch by nationals of any State during a specified period;

"(c) regulating seasons and areas of fishing, the types, sizes and amount of gear, and the types, sizes and number of fishing vessels that may be used;

"(d) fixing the age and size of fish and other species that may be caught;

"(e) specifying information required of fishing vessels, including catch and effort statistics and vessel position reports;

"(f) requiring, under the authorization and control of the coastal State, the conduct of specified fisheries research programmes and regulating the conduct of such research, including the sampling of catches, disposition of samples and reporting of associated scientific data;

"(g) the placing of observers or trainees on board such vessels by the coastal State;

"(h) the landing of all or any part of the catch by such vessels in the ports of the coastal State;

"(i) terms and conditions relating to joint ventures or other co-operative arrangements;

"(j) requirements for the training of personnel and the transfer of fisheries technology including enhancement of the coastal State's capability of undertaking fisheries research;

"(k) enforcement procedures.

"5. Coastal States shall give due notice of conservation and management laws and regulations."

Bilateral agreements

209. The concept of balancing interests by deciding whether and under what conditions certain activities with potential injuries may be undertaken has also been incorporated in bilateral agreements. In this respect the interests of acting entities, including private entities, as well as the common interest of the States who are parties to the agreement, appear to have been taken into account. For example, article 4 of chapter I of the Agreement between Finland and Sweden concerning frontier rivers States that where there are a number of projects involved affecting the same waters, preference shall be given to the project which may be assumed to be of the greatest public and private benefit. Thus, conflicting interests shall be accommodated in such a way that each may be satisfied without substantial injury to the others. This article 4 provides:

"Article 4

"In cases involving a number of different projects which affect the same waters or for some other reason cannot be carried out concurrently, preference shall be given to the project which may be assumed to be of the greatest public and private benefit. Conflicting interests shall, in so far as possible, be adjusted in such a way that each may be satisfied without substantial injury to the others."

210. Article 3 of chapter III of the above Agreement further provides that where any person would suffer damage or inconvenience as a result of hydraulic construction works, the works shall be carried out only if they can be shown to bring public or private benefit that substantially outweighs the inconvenience. The same article provides that where the injury from an activity is a substantial deterioration in the living conditions of the population or causes a permanent change in natural conditions which might entail substantially diminished comfort for people living in the vicinity or a significant nature conservancy loss or where significant public interests would be otherwise prejudiced, the construction may be permitted only if it is of particular importance to public interests. This article states:

"Article 3

"Where any person would suffer damage or inconvenience as a result of hydraulic construction works, the works shall be carried out only if they can be shown to bring public or private benefit that substantially outweighs the inconvenience.

"Where the construction would result in a substantial deterioration in the living conditions of the population or cause a permanent change in natural conditions such as might entail substantially diminished comfort for people living in the vicinity or a significant nature conservancy loss or where significant public interests would be otherwise prejudiced, the construction shall be permitted only if it is of particular importance for the economy or for the locality or from some other public standpoint.

"Compensation pursuant to chapter 7 shall be paid in respect of any damage or inconvenience."

211. Finally, article 5 of chapter VI of the above Agreement provides that in deciding whether permission should be granted to undertake the activities, equal consideration shall be given to conditions in both countries. Thus, a site shall be selected for the operations so that the purpose can be achieved in such a way as to cause minimum inconvenience:

"Article 5

"Compensation pursuant to chapter 7 shall be paid in respect of any damage or inconvenience caused by the operations referred to in article 3.

"In deciding whether permission should be granted for the operations, equal consideration shall be given to conditions in the two States.

"A site shall be selected for the operations such that their purpose can be achieved in such a manner as to cause minimum inconvenience and without unreasonable costs."

This agreement has attempted to reconcile the public with the private interest as well as with the other interests that both countries may have.

212. The preamble of the 1983 agreement between the United States and Mexico refers the long-term social well-being and the economic interests of the contracting .rties as well as of the global community. It provides:

"...

"Recognizing the importance of a healthful environment to the long-term economic and social well-being of present and future generations of each country as well as the global community;

"..."

213. The Convention between Norway and Sweden on Certain Questions relating to the Law on watercourses incorporates the concept of balancing interests in article 5. Accordingly, in deciding whether a particular activity may be carried out, its effects on both countries shall be taken into consideration. As a result, the article provides that the utility of an activity shall be considered solely in relation to the maintenance of the waterfall, or to the transport or floating interest on account of which the activity is to be carried out. Therefore, as a matter of general principle, the evaluation of any undertaking should be based on its usefulness to their joint waters, while taking into account its effect on both countries. The article states:

"Article 5

"In deciding whether an undertaking may be carried out, its effects in both countries shall be taken into consideration. As a rule, however, the utility of the undertaking shall be considered to be solely its utility for the waterfall, the immovable property, or the transport or floating interest on account of which the undertaking is to be carried out."

214. The Convention concerning the Boundary Waters between the United States and Canada provides a set of preferences for use of the joint waters by each State even within its own territory. Furthermore, it states that the International Joint Commission, a joint commission between the two States, may at its discretion approve any undertaking conditional upon the construction of remedial or protective works to compensate so far as possible for the particular use or diversion proposed. In such cases the Commission may require that suitable and adequate provision be made for the protection and indemnity against injury of any interests on either side of the boundary. Article VIII of the Convention provides:

"Article VIII.

"This International Joint Commission shall have jurisdiction over and shall pass upon all cases involving the use or obstruction or diversion of the waters with respect to which under Articles III and IV of this treaty the approval of this Commission is required, and in passing upon such cases the Commission shall be governed by the following rules or principles which are adopted by the High Contracting Parties for this purpose:

"The High Contracting Parties shall have, each on its own side of the boundary, equal and similar rights in the use of the waters hereinbefore defined as boundary waters.

"The following order of precedence shall be observed among the various uses enumerated hereinafter for these waters, and no use shall be permitted which tends materially to conflict with or restrain any other use which is given preference over it in this order of precedence:

"(1) Uses for domestic and sanitary purposes;

"(2) Uses for navigation, including the service of canals for the purposes of navigation;

"(3) Uses for power and for irrigation purposes.

"The foregoing provisions shall not apply to or disturb any existing uses of boundary waters on either side of the boundary.

"The requirement for an equal division may in the discretion of the Commission be suspended in cases of temporary diversions along boundary waters at points where such equal division can not be made advantageously on account of local conditions, and where such diversion does not diminish elsewhere the amount available for use on the other side.

"The Commission in its discretion may make its approval in any case conditional upon the construction of remedial or protective works to compensate so far as possible for the particular use or diversion proposed, and in such cases may require that suitable and adequate provision, approved by the Commission, be made for the protection and indemnity against injury of any interests on either side of the boundary.

"In cases involving the elevation of the natural level of waters on either side of the line as a result of the construction or maintenance on the other side of remedial or protective works or dams or other obstructions in boundary waters or in waters flowing therefrom or in waters below the boundary in rivers flowing across the boundary, the Commission shall require, as a condition of its approval thereof, that suitable and adequate provision, approved by it, be made for the protection and indemnity of all interests on the other side of the line which may be injured thereby.

"The majority of the Commissioners shall have power to render a decision. In case the Commission is evenly divided upon any question or matter presented to it for decision, separate reports shall be made by the Commissioners on each side to their own Government. The High Contracting Parties shall thereupon endeavor to agree upon an adjustment of the question or matter of difference, and if an agreement is reached between them, it shall be reduced to writing in the form of a protocol, and shall be communicated to the Commissioners, who shall take such further proceedings as may be necessary to carry out such agreement."

215. Under article 29 of the German-Danish frontier river Treaty, 136/ the Frontier Water Commission will balance the interests of the parties in the case of works on a large scale. The Commission may take certain decisions regarding the direction of the flow of the river regardless of the opposition of the parties. In such cases, of course, compensation shall also be paid to injured individuals. The article states:

"In the case of works on a large scale, the Frontier Water Commission may, however, direct that the water should be caused to flow round one or more properties adjacent to the watercourse, or that the water shall be discharged into another watercourse without regard to the opposition of the parties concerned. In such cases, compensation shall be granted to persons suffering prejudice for any loss and damage caused."

The second paragraph of article 26 also appears to have accommodated the interests of the parties when it states that the riparian proprietors must, subject to compensation, permit certain changes in the watercourse. Hence when certain activities are important to the acting State and the injuries are not devastating to the injured State and could easily be compensated, the activities may be undertaken, but compensation should then be made. The paragraph reads:

"The riparian proprietors must permit, subject to compensation, the erection at or in the watercourse of subsidiary works necessary to carry out the regularisation of a river bed, the deposit of earth, stones, gravel, sand, wood, etc., on the land on the banks, the transport to and fro of such materials and the storing and transport to and fro of building materials, and must also grant regular right of access to the workmen and inspectors."

136/ Agreement for the Settlement of Questions Relating to Watercourses and Dikes on the German-Danish Frontier (10 April 1922).

216. In some bilateral agreements interests have been balanced by the division of responsibilities between the parties. The United States, in at least two agreements with Italy 137/ and the Netherlands 138/ regarding the use of their port

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137/ Agreement between the Government of Italy on the Use of Italian ports by the N.S. Savannah (23 November 1964). Articles III and IV of the treaty read:

"Article III

"Port Arrangements

"(a) The Italian Government shall give the competent authorities the instructions necessary for the entry of the Ship into Italian ports and for the use thereof.

"(b) The competent Italian authorities shall take all necessary measures for fire safety and police protection, crowd control, and the general preparation of facilities relating to the entry of the Ship.

"(c) Control of public access to the Ship shall be the responsibility of the Master of the Ship. Special arrangements for such control shall be agreed upon by the Master and the authorities designated by the Italian Government.

"(d) The Master shall comply with local regulations. If the Operator or the Master himself considers that the application of those regulations does not fulfil the safety requirements of operation of the nuclear plant, the necessary measures shall be agreed upon in this connection.

"(e) The Italian Government shall see to the surveillance of the areas in the vicinity of the Ship, with the assistance of the Government of the United States, as mutually agreed.

"Article IV

"Inspection

"While the Ship is in Italian territorial waters, the designated authorities shall have reasonable access to it for purposes of inspecting the Ship and its operating records and program data, to determine whether it has been operated in accordance with the Manual of Operations."

138/ Operational Agreement on Arrangements for a Visit of the N.S. Savannah to the Netherlands (20 May 1963). Articles 14, 15, 16 and 22 of the Agreement provide:

"Article 14

"Local authorities shall provide for normal fire and police protection, and crowd control and shall make general preparations in the port area for the visit of the Ship.

by its nuclear ship, has divided the responsibility for the port's security arrangements and inspection of the ship between the master of the ship and the port authorities. The host Governments are responsible for taking all necessary measures for fire safety and police protection, crowd control and the general preparation of facilities relating to the entry of the ship. The designated authorities of the host countries shall also have reasonable access to the ship for purposes of inspection to determine whether it has been operated in accordance with the required regulations. It appears that once an activity is taking place within the territory of the potentially injured State, local security is the responsibility of that State.

Judicial decisions and State practice other than agreements

217. In judicial decisions and official correspondence characterization of harm has been much influenced by the balancing of interests. Thus, there appears to be no fixed and definite substantive rule on what constitutes injury. Rather there are a set of factors which have been balanced against one another. In some judicial decisions regarding competing uses of shared resources, certain uses have been given priority over others. The priority of one use over others occasionally

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(continued)

"Article 15

"Control of public access to the Ship shall be the responsibility of the Master of the Ship. Special arrangements relating to such control shall be made by the Master with the concurrence of the authorities assigned therefor by the Netherlands Government.

"Inspection

"Article 16

"While the Ship is in Netherlands waters or in the port area of Rotterdam the authorities assigned therefor by the Netherlands Government shall have reasonable access to the Ship to enable them to carry out the inspections as described in Recommendation 11 of Annex C to the Final Act of the International Conference on Safety of Life at Sea, 1960, and to determine whether the Ship has been and is being operated in accordance with its Safety Assessment and its Operating Manual."

"Security

"Article 22

"As regards the security of the Ship while in Netherlands waters the Netherlands Government only accepts the responsibilities it usually accepts with regard to conventional ships."

appears to have been effected by crisis conditions, such as the degree of tension and instability in international relations, etc. For example, the United States and Great Britain, in preparing for their nuclear tests in Eniwetok Islands and Christmas Islands in the mid-1950s took the position that military exercises were a traditional use of the high seas. Thus their establishment of danger areas, on the basis of their information, would not result in substantial losses. Finally, they claimed that the inconvenience which the tests may cause for other traditional uses of the high seas could not undermine the military uses. They further claimed that their military use of the high seas was not only for the protection of important security interests of their respective countries, but also for the strengtheing of security of the "free world". They unilaterally balanced their security needs with the interests of some other States in remaining free of the health hazards of fall-out or radioactivity. Security won in the balance.

218. The United States, in a note dated 19 March 1956 to the Japanese Government, stated their position:

> "It cannot be regarded as established on the basis of present information that substantial economic losses will result from the establishment of the danger area. Military exercises are a traditional use of the high seas, and the Government of the United States considers that inconvenience for other traditional uses which may result therefrom is not compensable as a matter of right.
>
> "In conclusion the Acting Secretary wishes to give the assurance that the United States continues only such tests as are essential to the strength of the free world defense and security. It has sought and will continue to seek with renewed efforts a system for a safe-guarded and controlled disarmament program which ultimately may lead to the type of action envisaged by the resolutions of the Japanese Diet.
>
> "The United States recognizes and strongly sympathizes with the humane motivations which inspired the resolutions of the Japanese Diet, but is constrained to point out that the problem of suspending nuclear weapons tests cannot be treated separately from the establishment of a safeguarded and controlled disarmament program.
>
> "The United States Government is convinced that the proposed nuclear tests are vital to its own defense and the defense of the free world because the possession and competence in the use of nuclear weapons by leading nations of the free world are the chief deterrent to aggression and to war. International agreement to abandon tests without effective safeguards against the clandestine development of new weapons would involve a reliance by the United States upon the good intentions of certain nations not justified by the record of their actions in the past.

"The United States Government is convinced that no world-wide health hazard exists from the past or planned tests. In this connection the United States proposed a resolution unanimously adopted by the United Nations Tenth General Assembly establishing a scientific committee on radiation, of which Japan is a member, to facilitate pooling and distribution of all available scientific data on the effects of radiation upon man and his environment. During the forthcoming tests the United States will make every effort to eliminate any danger and to minimize any inconvenience to maritime commerce and fishing." 139/

219. Great Britain, in defending its nuclear tests, considered the temporary use of areas outside territorial waters for nuclear testing similar to using those waters for gunnery or bombing practice; such use had never been considered a violation of the principle of freedom of navigation on the high seas and hence no special agreement was called for. Great Britain considered the announcement of a temporary danger area on the high seas to have been in the safety interest of others, and that Great Britain had tried not to interfere with regular shipping routes. 140/

220. Some decisions imposing the duty to balance the interests of the States parties refer to interests in general terms and leave it up to each State individually to determine which factors are to be weighed. The Lake Lanoux Tribunal took this approach:

"The Tribunal is of the opinion that, according to the rules of good faith, the upstream State is under the obligation to take into consideration the various interests involved, to seek to give them every satisfaction compatible with the pursuit of its own interests, and to show that in this regard it is genuinely concerned to reconcile the interests of the other riparian State with its own." 141/

221. Balancing interests through co-operation between the parties involved to modify a plan in order to protect their interests without halting an activity was clearly reflected in such co-operation between the United States and Mexico. In 1957, Mexico decided to construct highways near the United States' frontier. The construction of the highways, as they were originally planned, would have greatly increased the natural flow of water from that part of Mexico into the United States and would have caused injuries to residents and their property located in the United States. Realizing the importance of the construction of the highway to Mexico, the United States Section of the Commission on International Boundary and Water Commission (between Mexico and the United States) acted for two years in an engineering advisory capacity to the United States Department of State and the American Consulate in Mexico in their informal discussion of the projects and the

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139/ Whiteman, op. cit., vol. 4, pp. 576-577.

140/ Ibid., p. 600.

141/ International Law Reports (1957), p. 139.

safety precautions considered essential to prevent the injuries which may have been caused by the construction of the highway. 142/ As a result of the technical discusdsions, several modifications of the original plans were agreed upon.

222. In at least one case, the issue of tolerance of "natural risk" was brought up in a judicial decision. In the case of Aargau v. Solothurn, 143/ in the first phase, the Swiss Federal Court ruled in favour of the complete protection from the risks associated with target practice in the neighbouring canton's border area, based on applicable principles of international law. 143/ In the second phase, however, the Court reversed itself and permitted continued operation of the target practice. 143/ The Court found that in spite of additional safety measures, the probability of stray bullets could not be eliminated. It concluded that the continued use of the range caused a "practically inevitable natural risk", one that had to be tolerated between neighbours. 144/ Apparently, the reversal was due to federal legislation passed after the first decision. The legislation required local communities to provide military target practice facilities. Since absolutely safe practice facilities in the communities concerned were unavailable, the Court found that the neighbouring canton's demand for absolute protection against transboundary crossong of bullets was in conflict with the implementation of the federal legislation. 144/

223. In judicial decisions among the federated States, the United State Supreme Court has referred to the prior existence of a beneficial use as a factor which deserves relative but not absolute protection. In Washington v. Oregon, 145/ the Supreme Court provided:

> "A priority once acquired or put in course of acquisition by the posting of a notice may be lost to the claimant by abandonment or laches ... The essence of the doctrine of prior appropriation is beneficial use, not a stale or barren claim. Only diligence and good faith will keep the privilege alive." 146/

224. In Nebraska v. Wyoming, 147/ while the Supreme Court acknowledged the importance of prior appropriation of waters, it held that it must be balanced against other factors and thus that factor was not per se the determining element:

142/ Whiteman, op. cit., p. 260.

143/ Judgement of 1 November 1900, 26 BGE.I, p. 444, quoted in Handl, "An international legal perspective on the conduct of abnormally dangerous activities in frontier areas," Ecology Law Quarterly, vol. 7, (1978), p. 13.

144/ Ibid., judgement of 4 February 1915.

145/ United States Reports, vol. 297, p. 517.

146/ Ibid., p. 527. Emphasis added.

147/ Ibid., vol. 325, p. 589.

> "[Priority of appropriation is the guiding principle but] physical and climatic conditions, the consumptive use of water in the several sections of the river, the character and rate of return flows, the extent of established uses, the availability of storage water, the practical effect of wasteful uses on downstream areas, the damage to upstream areas as compared to the benefits to downstream areas if a limitation is imposed on the former." 148/

225. The Supreme Court has also referred to reciprocal restraints in demands by parties about using a shared resource. In New Jersey v. New York 149/ the Supreme Court emphasized that just as the upper riparian could not cut off the flow of water towards the lower riparian, the latter could not require the former to give up its interests in the river so that river might come down to the latter undiminished.

226. The United States Supreme Court has rejected the concept of future use as an element which should frustrate present equitable use. In Connecticut v. Massachusetts, 150/ the Supreme Court, after reviewing arguments supporting the granting of an injunction against a diversion by Massachusetts of waters of an interstate river, concluded:

> "At most, there is a mere possibility that at some undisclosed time the owner (of an allegedly affected power station in Connecticut), were it not for the diversion, might construct additional works capable of using all the flow of the river including the waters proposed to be taken by Massachusetts. The injunction will not issue in the absence of actual or presently threatened interference." 151/

227. In the same case, the United States Supreme Court has also touched upon the principles of efficient use and alternative modes of resource use to avoid transboundary injuries. In the above case, the Supreme Court examined in detail the possible consequences for both Connecticut and Massachusetts of feasible alternative arrangements according to which Massachusetts could have avoided a diversion of waters from an interstate stream and any possibility of conflict with the lower riparian Connecticut. 152/ Similarly in Kansas v. Colorado, 153/ the Supreme Court examined the changes brought about in Kansas, the lower riparian, as a result of the appropriation of a certain portion of the flow of their shared river by Colorado. The Court stated:

148/ Ibid., p. 618.

149/ Ibid., vol. 283, pp. 342-343.

150/ Ibid., vol. 282, p. 660.

151/ Ibid., p. 673.

152/ Ibid., pp. 668-674.

153/ Ibid., vol. 206, p. 46.

"if there may be many thousands of acres in Colorado destitute of vegetation, which by the taking of water from the Arkansas River and in no other way can be made valuable as arable lands producing an abundance of vegetable growth, and this transformation of desert land has the effect, through percolation of water in the soil, or in any other way, of giving to Kansas territory, although not in the Arkansas Valley, a benefit from water as great as that which would enure by keeping the flow of the Arkansas in its channel undiminished, then we may rightfully regard the usefulness to Colorado as justifying its action ..." 154/

In the same case the Court referred to the principle of non-discrimination as relevant in balancing the interests of the two federated States. The Supreme Court noted:

"As Kansas thus recognizes the right of appropriating the waters of a stream (within its own boundaries) for the purpose of irrigation, subject to the condition of an equitable diversion between the riparian proprietors, she cannot complain if the same rule is administered between herself and a sister State.". 155/

228. The superiority of the principle of perfect equality of States over any preferential treatment was reflected in the decision of the Permanent Court of International Justice in the River Oder case:

"[A] community of interest in a navigable river becomes the basis of a common legal right, the essential features of which are the perfect equality of all riparian States in the use of the whole course of the river and the exclusion of any preferential privilege of any one riparian State in relation to the others." 156/

If the concept of "perfect equality" refers only to the physical and geographical relationship among States and between them on the one hand, and a shared resource on the other hand, it is then a simple and rather a mechanical formula. But if if purports to consider factors of an economic, social, historical, humanitarian, etc. nature then it appears to be much too complicated.

229. In determining how a shared resource or its use between two or more States should be distributed, the position of the International Court of Justice has

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154/ Ibid., pp. 100-101.

155/ Ibid., pp. 104-105.

156/ Case relating to the Territorial Jursidiction of the International Commission of the River Oder (P.C.I.J., Series A, No. 23 (1929), p. 27).

undergone a change. In the Anglo-Norwegian Fisheries Case, 157/ in deciding whether the 1935 Norwegian Decree concerning the delimitation of the Norwegian fisheries zone was compatible with the principles of international law, the court emphasized primarily the geographical factors of the coastal configuration. After referring to some rather vague criteria to provide an adequate basis for a decision, the Court basically examined the geographical configuration of the coastal States. At one point, though the Court referred to "practical needs and local requirements", it concluded that the drawing of baselines must not depart to any appreciable extent from the general direction of the coast. Finally the Court mentioned certain economic interests peculiar to a region as relevant factors:

> "In this connection, certain basic considerations inherent in the nature of the territorial sea, bring to light certain criteria which, though not entirely precise, can provide courts with an adequate basis for their decisions, which can be adapted to the diverse facts in question.
>
> "Among these considerations, some reference must be made to the close dependence of the territorial sea upon the land domain. It is the land which confers upon the coastal State a right to the waters off its coasts. It follows that while such a State must be allowed the latitude necessary in order to be able to adapt its delimitation to practical needs and local requirements, the drawing of base-lines must not depart to any appreciable extent from the general direction of the coast.
>
> "Another fundamental consideration, of particular importance in this case, is the more or less close relationship existing between certain sea areas and the land formations which divide or surround them. The real question raised in the choice of base-lines is in effect whether certain sea areas lying within these lines are sufficiently closely linked to the land domain to be subject to the régime of internal waters. This idea, which is at the basis of the determination of the rules relating to bays, should be liberally applied in the case of a coast, the geographical configuration of which is as unusual as that of Norway.
>
> "Finally, there is one consideration not to be overlooked, the scope of which extends beyond purely geographical factors: that of certain economic interests peculiar to a region, the reality and importance of which are clearly evidenced by a long usage." 158/

230. Some 18 years later the Court, in the North Sea Continental Shelf Case, 159/ appeared to be moving away from emphasis on geographical factors. In that case

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157/ I.C.J. Reports 1951, p. 116.

158/ Ibid., p. 133. Emphasis added.

159/ I.C.J. Reports 1969, p. 12.

Denmark and the Netherlands claimed that their continental shelves with the Federal Republic of Germany should be delimited in accordance with article 6 of the Geneva Convention on the Continental Shelf of 1958. This article refers to "equidistance" as the applicable principle to divide continental shelves in the absence of any agreements among the States, unless, or to the extent to which, "special circumstances" are recognized to exist. The Court concluded that the application of article 6 of the Geneva Convention was not obligatory between the parties. The Court, then, introduced the concept of "equitable principles" as the foundation of the concepts of "justice" and "good faith". The Court stated that geographical factors are not the only considerations. Rather, the Court said that there was no legal limitation to the factors to be considered in order to make it possible to apply the equitable procedures:

> "93. In fact, there is no legal limit to the considerations which States may take account of for the purpose of making sure that they apply equitable procedures, and more often than not it is the balancing-up of all such considerations that will produce this result rather than reliance on one to the exclusion of all others. The problem of the relative weight to be accorded to different considerations naturally varies with the circumstances of the case.
>
> "94. In balancing the factors in question it would appear that various aspects must be taken into account. Some are related to the geological, others to the geographical aspect of the situation, others again to the idea of the unity of any deposits. These criteria, though not entirely precise, can provide adequate bases for decision adapted to the factual situation.
>
> "95. The institution of the continental shelf has arisen out of the recognition of a physical fact; and the link between this fact and the law, without which that institution would never have existed, remains an important element for the application of its legal régime." 160/

231. That approach was followed more explicitly by the Court in the Fisheries Jurisdiction Case, 161/ in which the United Kingdom disputed Iceland's unilateral expansion of its fisheries zone. The Court ordered the parties to take into account factors such as the public interest of the population of the States involved, the dependence of coastal populations for their livelihood on the fishing resources of the disputed area and consequently the interest of parties in conservation and equitable exploitation of those resources. Accordingly, the rights and interests of the respective States change with variations of the economic dependence on the resource. The Fisheries Jurisdiction Court stated that the preferential rights of a coastal State in a particular circumstance are not a static concept. A State's preference as a function of an exceptional dependence varies as the extent of that dependence changes. The Court further referred to two distinct interests of the States involved: the livelihood of people and the

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160/ Ibid., pp. 50-51. Emphasis added.

161/ I.C.J. Reports 1974, p. 3.

economic development in each State. It is essential, the Court stated, that in each case the dependence of the coastal State on the fisheries be appraised in relation to that of the other State concerned in order to design an equitable régime of exploitation of fishing resources:

> "70. This is not to say that the preferential rights of a coastal State in a special situation are a static concept, in the sense that the degree of the coastal State's preference is to be considered as fixed for ever at some given moment. On the contrary, the preferential rights are a function of the exceptional dependence of such a coastal State on the fisheries in adjacent waters and may, therefore, vary as the extent of that dependence changes. Furthermore, as was expressly recognized in the 1961 Exchange of Notes, a coastal State's exceptional dependence on fisheries may relate not only to the livelihood of its people but to its economic development. In each case, it is essnetially a matter of appraising the dependence of the coastal State on the fisheries in question in relation to that of the other State concerned and of reconciling them in as equitable a manner as is possible." 162/

The Court finally held that Iceland and the United Kingdom were under obligation to negotiate while taking into account the following factors:

> "(a) that in the distribution of the fishing resources in the areas specified in subparagraph 2 Iceland is entitled to a preferential share to the extent of the special dependence of its people upon the fisheries in the seas around its coasts for their livelihood and economic development;
>
> "(b) that by reason of its fishing activities in the areas specified in subparagraph 2, the United Kingdom also has established rights in the fishery resources of the said areas on which elements of its people depend for their livelihood and economic well-being;
>
> "(c) the obligation to pay due regard to the interests of other States in the conservation and equitable exploitation of these resources;
>
> "(d) that the above-mentioned rights of Iceland and of the United Kingdom should each be given effect to the extent compatible with the conservation and development of the fishery resources in the areas specified in subparagraph 2 and with the interests of other States in their conservation and equitable exploitation;
>
> "(e) their obligation to keep under review those resources and to examine together, in the light of scientific and other available information, such measures as may be required for the conservation and development, and equitable exploitation, of those resources, making use of the machinery established by the North-East Atlantic Fisheries Convention or such other means as may be agreed upon as a result of international negotiations." 162/

162/ Ibid., p. 34-35.

232. One important element which might have affected the decision of the Court on this case was the ongoing Conference on the Law of the Sea. The Court might not have wanted to make any ruling which could have been incompatible with the Law of the Sea negotiations on the delimitation of the fishery zone. In fact, the Court in its finding asked the parties, in their negotiation, to make use of the machinery established by the North-East Atlantic Fisheries Convention or "such other means as may be agreed upon as a result of international negotiations". 162/

233. The International Court of Justice in the most recent case, Continental Shelf 163/ between Tunisia and the Libyan Arab Jamahiriya decided that it was bound to make a decision on the basis of equitable principles, "divorced from the concept of natural prolongation". 164/ The Court further stated:

> "The result of the application of equitable principles must be equitable. This terminology, which is generally used, is not entirely satisfactory because it employs the term equitable to characterize both the result to be achieved and the means to be applied to reach this result. It is, however, the result which is predominent, the principles are subordinate to the goal." 164/

With that explanation, the Court did not identify any equitable principle, but it deemed it to be its task "to balance up the various considerations which it regards as relevant in order to produce an equitable result". 165/ The Court tried, somehow, to propose a procedure for consideration of various factors by stating that: "While it is clear that no rigid rules exist as to the exact weight to be attached to each element in the case, this is very far from being an exercise of discretion or conciliation; nor is it an operation of distributive justice." 165/ The Court stated that in addition to giving consideration to maritime limits claimed by both parties, it should duly examine claims to historic rights made by Tunisia as well as a number of economic considerations which one or the other party had urged as relevant. 166/ Tunisia claimed that its relative poverty vis-a-vis the Libyan Arab Jamahiriya in terms of absence of natural resources such as oil and gas, as well as its economic dependency on fishing resources derived from its "historic waters" which supplement its national economy to survive as a country, must be taken into account. 167/ The Court, however, found that those economic considerations could not be taken into account in that case. 167/ It noted:

163/ I.C.J. Reports 1982, p. 18.

164/ Ibid., p. 59.

165/ Ibid., p. 60.

166/ Ibid., pp. 64-65.

167/ Ibid., p. 77

"They [these economic factors] are virtually extraneous factors since they are variables which unpredictable national fortune or calamity, as the case may be, might at any time cause to tilt the scale one way or the other. A country might be poor today and become rich tomorrow as a result of an event such as the discovery of a valuable economic resource." 167/

234. The Court finally decided that the delimitation be effected "in accordance with equitable principles, and taking into account of all relevant circumstances". The Court enumerated those relevant circumstances as including the following:

"(1) the fact that the area relevant to the delimitation in the present case is bounded by the Tunisian coast from Ras Ajdir to Ras Kaboudia and the Libyan coast from Ras Ajdir to Ras Tajoura and by the parallel of latitude passing through Ras Kaboudia and the meridian passing through Ras Tajoura, the rights of third States being reserved;

"(2) the general configuration of the coasts of the Parties, and in particular the marked change in direction of the Tunisian coastline between Ras Ajdir and Ras Kaboudia;

"(3) the existence and position of the Kerkennah Islands;

"(4) the land frontier between the Parties, and their conduct prior to 1974 in the grant of petroleum concessions, resulting in the employment of a line seawards from Ras Ajdir at an angle of approximately 26° east of the meridian, which line corresponds to the line perpendicular to the coast at the frontier point which had in the past been observed as a de facto maritime limit;

"(5) the element of a reasonable degree of proportionality, which a delimitation carried out in accordance with equitable principles ought to bring about between the extent of the continental shelf areas appertaining to the coastal State and the length of the relevant part of its coast, measured in the general direction of the coastlines, account being taken for this purpose of the effects, actual or prospective, of any other continental shelf delimitation between States in the same region." 168/

The elements mentioned by the Court, with one exception, appear to be basically physical and geographical considerations. The exception is included in factor 4 where it refers to "conduct prior to 1974 in the grant of petroleum concessions". The Court appears to have rejected some of the economic factors, considered

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168/ Ibid., p. 93.

appropriate by the Court in its previous decisions, in the Anglo-Norwegian Fisheries Case 169/ and in the Fisheries Jurisdiction Case. 170/

235. The difficulties associated with the equitable principle, which do not appear to have been resolved, concern first the kind of and limit to the factors to be considered and, secondly, the value to be attached to the different factors. The decision of the Court in the Continental Shelf Case does not appear to have resolved these questions. 171/

236. In The Channel Arbitration, 172/ the Tribunal referred to the "equitable principle" as relevant in balancing the rights and interests of the parties in delimiting their continental shelves. In that respect it found that the claim made by the United Kingdom that, among other considerations, in dividing the continental shelf, the responsibility of the United Kingdom for the defence and security of its islands in the Channel should be taken into account, carried a "certain weight". 173/

237. Precedent demonstrates that authorities who balanced the interest of parties involved in relation to a particular act or conduct have been either the parties jointly or a third party. In two incidents examined in this study, the acting States unilaterally balanced their own security interest with interests of other international actors. 174/

169/ I.C.J. Reports 1951, p. 116.

170/ I.C.J. Reports 1974, p. 34.

171/ One of the early references to equitable principles for dividing continental shelves was made by President Truman. In 1945, President Truman mentioned the "equitable principle" on the basis of which the continental shelves between neighbouring States should be divided. Without defining the principle, the Proclamation of President Truman provides that: "In cases where the continental shelf [of the United States] extends to the shores of another State, or is shared with an adjacent State, the boundary shall be determined by the United States and the State concerned in accordance with equitable principles." (Proclamation No. 2667, Dept. of State Bulletin, vol. 13 (1945), p. 485).

172/ Arbitration between the United Kingdom of Great Britain and Northern Ireland and the French Republic on the delimitation of the continental shelf: The Channel Arbitration, Int'l Law Materials, vol. 18 (1979), p. 397.

173/ Ibid., para. 198.

174/ United States and Great Britain in Eniwetok Atoll and Christmas Islands nuclear tests.

238. The conclusion of a comprehensive agreement between the parties in Lake Lanoux has been considered an appropriate procedure to balance the interest of the parties. The Tribunal stated:

> "The only way to arrive at such compromises of interests is to conclude agreements on an increasingly comprehensive basis. International practice reflects the conviction that States ought to strive to conclude such agreements; there would thus appear to be an obligation to accept in good faith all communications and contacts which could, by broad comparison of interests and reciprocal good will, provide states with the best conditions for concluding agreements." 175/

Hence the parties were considered appropriate authorities to balance their interest. Similarly, in the North Sea Continental Shelf Cases, the Court directed the States parties to take into consideration certain factors to balance their interests in delimiting their continental shelf. The States parties voluntarily recognized the competence of the Court to prescribe and point out how their continenital shelf was to be divided, while the States maintained their own competence to apply those prescriptions themselves. In the Fisheries Jursidiction Case, the Court ordered the parties to take into account certain factors which would assure the balance of the parties' interests in dividing the exploitation of certain fishery resources. The States parties were to apply those prescriptions themselves. In the Anglo-Norwegian Fisheriers Case, however, the Court, with the consent of both States parties, prescribed the criteria relevant to balancing interests and then itself applied those criteria to determine whether or not Norway's unilateral action in delimiting its fisheries zone had taken into account the interests of the neighbouring State.

239. On occasion, the acting State has taken unilateral decisions to halt or modify the conduct of a particular hazardous activity at the request of the injured State. In 1892, French troops staged target practice exercises near the Swiss border. After Switzerland protested the danger to a nearby Swiss community, French military authorities halted the exercises until steps had been taken to avoid accidental transboundary injuries. 176/

240. With regard to Mexico's project of construction of a highway, the Governments of the United States and Mexico, through negotiation, balanced their interests and agreed upon a solution, while in the atmospheric nuclear testing by the United States and Great Britain in Eniwetok Islands and Christmas Islands, the acting States themselves balanced their own security interests with those of the affected entities. Of course, they claimed that they, in balancing such interests, had taken into consideration international law principles.

175/ International Law Reports (1957), pp. 129-130.

176/ Guggenheim, "La pratique suisse" (1956), Annuaire Suisse de Droit International, vol. 14 (1957), p. 168.

241. The United States, in another nuclear testing, unilaterally balanced its own security interest with that of other States. In 1971, the United States planned its third underground nuclear test named "Cannikin" on Amchitka. In response to that plan, the Canadian Government protested and expressed its concern to the United States Government. Such protest to the United States and not to other Governments involved in underground nuclear tests was explained by the Canadian Secretary of State for External Affairs on the ground of the special effect of the test on Canada:

> "such a test as was proposed could have a direct effect on people living on the Pacific Coast in both Canada and the United States. Indeed, such a nuclear explosion [was] to be condemned on two counts: first, it [was] a continuation of the testing and, second, because it happen[ed] to be in an area of difficult terrain where there might be untoward effects." 177/

242. Canada feared that the tests might produce a major earthquake, a tidal wave, or leakage of radioactive materials into the environment. 178/ In response to the Canadian concern, the United States assured that country that it would take full account of Canada's interests. 179/

177/ International Canada, vol. 2 (1971), p. 97.

178/ Ibid., p. 200.

179/ Ibid., p. 199.

D. Exoneration from prior negotiation

243. Under certain conditions States may undertake activities which they know will cause extraterritorial injuries without prior consultation. Such situations may be rare, but nevertheless can occur, as for example in cases of "self-help", "self-defence" or force majeure. Exemptions from prior negotiations or consultations do not necessarily secure exemptions from all levels of impact assessment. Depending upon the condition under which particular activities are undertaken, the impact assessment may be carried out by different procedures appropriate to the "crisis" situation. Even during the "crisis" situation it may be expected that some consideration will be given to minimizing injuries to others. Nor does it appear that exemption from prior consultation necessarily entails exoneration from liability of the acting State for damage.

Multilateral agreements

244. The Protocol relating to Intervention on the High Seas in Cases of Marine Pollution by Substances Other than Oil appears to do away with the requirement of prior negotiation in case of self-help. Article I provides:

> "Article I
>
> "1. Parties to the present Protocol may take such measures on the high seas as may be necessary to prevent, mitigate or eliminate grave and imminent danger to their coastline or related interests from pollution or threat of pollution by substances other than oil following upon a maritime casualty or acts related to such a casualty, which may reasonably be expected to result in major harmful consequences.
>
> "2. 'Substances other than oil' as referred to in paragraph 1 shall be:
>
> "(a) those substances enumerated in a list which shall be established by an appropriate body designated by the Organization and which shall be annexed to the present Protocol, and
>
> "(b) those other substances which are liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea.
>
> "3. Whenever an intervening Party takes action with regard to a substance referred to in paragraph 2(b) above that Party shall have the burden of establishing that the substance, under the circumstances present at the time of the intervention, could reasonably pose a grave and imminent danger analogous to that posed by any of the substances enumerated in the list referred to in paragraph 2(a) above."

The potentially injured State, of course, has the burden of establishing that the substances, under the circumstances present at the time of intervention, could reasonably pose a grave and imminent danger analogous to that posed by any of the substances enumerated in the Protocol.

245. Paragraph (d) of article III of the International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties sets aside the requirement of prior negotiation in cases of extreme urgency requiring measures to be taken immediately. It provides:

> "(d) in cases of extreme urgency requiring measures to be taken immediately, the coastal State may take measures rendered necessary by the urgency of the situation, without prior notification or consultation or without continuing consultations already begun;".

However, the coastal State will be responsible for injuries if its measures go beyond what is proportionate to the danger and reasonable to prevent injuries (arts. V and VI).

246. Section 5 of part XII (arts. 207-212) of the Convention on the Law of the Sea provides that States, in addition to respecting prescribed international rules, have the competence to prescribe domestic laws to prevent, reduce and control pollution of the marine environment. Section 6 of part XII (arts. 213-222) enumerates measures for enforcing the rules in section 5. Among those measures, section 6 allows the coastal States to adopt national legislation and take unilateral measures to enforce the principles of protection of the environment embodied in the Convention and protect their coastal interests. In an attempt to balance interests, article 232, while granting unilateral competence to coastal States, warns against liability which may arise if coastal States take unlawful or unreasonable enforcement measures and cause injuries. The Article provides:

> "Article 232
>
> "Liability of States arising from enforcement measures
>
> "States shall be liable for damage or loss attributable to them arising from measures taken pursuant to section 6 when such measures are unlawful or exceed those reasonably required in the light of available information. States shall provide for recourse in their courts for actions in respect of such damage or loss."

Paragraph 3 of article 142 of the Convention also provides for exoneration from prior consultations, required by paragraph 2 of the same article, when coastal States have to take measures for self-help to prevent imminent danger to their coastlines. It provides:

> "3. Neither this Part nor any rights granted or exercised pursuant thereto shall affect the rights of coastal States to take such measures consistent with the relevant provisions of Part XII as may be necessary to prevent, mitigate or eliminate grave and imminent danger to their coastline, or related interests from pollution or threat thereof or from other hazardous occurrences resulting from or caused by any activities in the Area."

Bilateral agreements

247. Exoneration from prior negotiation concerning measures for self-help has been touched upon in at least two bilateral agreements examined in this study. These agreements do not remove the requirements for prior consultation and negotiation altogether, but set them aside prior to commencing self-help activities in certain crisis situations. For example, the Agreement between Canada and the United States of America Relating to the Exchange of Information on Weather Modification Activities provides in article VI that extreme emergencies, such as forest fires, may require immediate commencement by one party of weather modification activities of mutual interest notwithstanding the lack of sufficient time for prior notification or consultation as required by the Agreement. In such cases, however, the party undertaking such activities shall notify and fully inform the other party as soon as practicable and shall promptly enter into consultations at the request of the other party. Article VI reads:

"ARTICLE VI

"The Parties recognize that extreme emergencies, such as forest fires, may require immediate commencement by one of them of weather modification activities of mutual interest notwithstanding the lack of sufficient time for prior notification pursuant to Article IV, or for consultation pursuant to Article V. In such cases, the Party commencing such activities shall notify and fully inform the other Party as soon as practicable, and shall promptly enter into consultations at the request of the other Party."

248. The German-Danish Frontier Watercourses treaty 180/ also provides that protective measures may be taken without prior authorization in case of danger. If these measures are to become permanent, then the party that has taken them shall obtain authorization immediately after the danger has been averted. The last paragraph of article 29 reads:

"Protective measures taken in cases of necessity when danger is threatening require no authorisation. If, however, they become permanent, authorisation shall be obtained when the immediate danger has been averted."

Judicial decisions and State practice other than agreements

249. In judicial decisions and official correspondence examined in this study, there appears to be no instance in which exoneration from prior negotiation has been recognized. Of course, by negotiation, the study refers in this particular context to any form of submission of notice regarding the commencement of an activity. For example, there might be serious questions as to whether the general notices given by the United States and the United Kingdom about their nuclear tests constitute prior negotiation. Similarly, it is open to question whether the exchange of official correspondence between the above States and Japan and between the United States and Canada regarding the Cannikin test are considered prior

180/ Agreement for the Settlement of Questions Relating to Watercourses and Dikes on the German-Danish Frontier (10 April 1922).

negotiations. Most probably, the correspondence between the acting and the affected States forced the acting States to re-examine their projects in the light of the objections and concerns raised by the affected States. They were not negotiations in the sense of a mutual re-evaluation of the activities. At the same time, the overall reaction of Japan and Canada may neither be interpreted as their expression of consent to such procedure, nor complete opposition to it.

250. Another ambiguity in the characterization of exoneration from prior negotiation may be observed in a notice sent by Mexico in 1955 to the United States informing that Government of facilities being constructed in Mexico to protect the Mexicans from flooding, which might in turn cause some flooding in the United States. The background of the issue began in 1951 with a series of exchanges of official correspondence between Mexico and the United States concerning the construction of a drainage canal known as the Rose Street Ditch for the purposes of preventing flooding caused by the collection of rain water gathered by the Rose Street Canal in Douglas in the United States. The annual damage the flood caused to a city in Mexico, Agua Prieta, was substantial. The damage to the United States was insignificant. But any protective construction in Mexico would have turned the flood back to the United States. Two years' negotiations regarding the construction of the dike did not result in any agreement as to the plan. Mexico, finally, in a letter dated 24 March 1955 to the Secretary of State, after referring to the fruitless efforts Mexico had made to reach an agreement with the United States, and the substantial injuries Mexico was suffering annually because of the flood, informed the United States Government that as of 1 May of that year, Mexico's Government would begin to construct certain protective works to prevent the entry into that Mexican city of rain water collected by the Rose Street Canal in Douglas in the United States. Thus, Mexico informed the United States Government so the latter could take such measures as it considered advisable to prevent consequences which the return of such water might have in the city of Douglas. 181/ In a reply letter dated 12 May 1955, the Secretary of State explicitly recognized the right of Mexico to take protective measures at any time to prevent injuries to its territory:

> "There would seem to be no doubt that Mexico has the right to prevent water coming into Mexico through the Rose Street Canal by the construction at anytime of a dike on the Mexican side of the international boundary." 182/

251. The Secretary, however, referred to principles of international law obliging every State to respect the full sovereignty of other States and to refrain from taking actions or authorizing actions on its territory which cause injuries to another State:

> "On the other hand, the principle of international law which obligates every State to respect the full sovereignty of other States and to refrain from creating or authorizing or countenancing the creation on its territory of any agency, such as the Rose Street Canal, which causes injury to another State or its inhabitants, is one of long standing and universal recognition." 182/

181/ Whiteman, op. cit., vol. 6, p. 264.

182/ Whiteman, p. 265; op. cit. Emphasis added.

III. PREVENTIVE MEASURES

252. Preventive measures refer to decisions to be taken in relation to potentially harmful activities in order to prevent or to minimize injuries. In the context of the concept of negligence, preventive measures are those taken by a person to minimize or prevent injurious results of the conduct which involves an unreasonably great risk of causing damage to others. Some of those preventive measures are general and abstract, as expected from a reasonable man to do in the exercise of his own best judgement. Others are required by law - external measures - and entail liability for the person who is ignorant of them, regardless of his intent. In the context of inter-State relationships, the acting State is obliged to implement the measures that it has agreed upon between itself and the injured State. Sometimes the acting State may not be obligated to take any specific measure; taking any preventive measures may be left to the best judgement of the acting State. Nevertheless, in situations where preventive measures (or external measures) are to be taken, they do not necessarily replace the requirement of the exercise of the best judgement of the acting State, or reduce its importance. The latter should be interpreted, not as the judgement of any ordinary person, but as that of a skilled person. Actors of conducts of such magnitude which may have extraterritorial consequences are skilled. Government personnel, who normally supervise and are responsible for the application of government regulations concerning certain activities by private individuals are also expected to be skilled and have special competence. Therefore, the concept of the best judgement of a reasonable man in the context of activities with extraterritorial consequences must be interpreted with this understanding.

253. The preventive measures have been developed in treaties and other forms of State practice in their procedural aspect as well as in their content. The procedures of preventive measures are the process of management and monitoring: the setting up of an institution for such a function, securing its operational procedure, and the continuity and effectiveness of assessment of the activities, etc. This process may be equipped to take into account new elements developed during the preparation for or actual operation of potentially harmful activities. State practice demonstrates that the management and monitoring process may be undertaken by the States concerned, a third party (including a commission) or occasionally other entities which may be injured by the activities.

254. The content of preventive measures includes recommendations concerning changes to be made to prevent or minimize injuries or remedy damage. Recommendations or monitoring decisions may require a specific or a more general change in the process of the performance of activities. Thus they may be related to prevention or minimization of harm or to methods securing the payment of compensation in case of liability.

A. Management and monitoring

Multilateral agreements

255. Preventive measures may involve the adoption of national legislation and other regulatory provisions. The Convention on the Law of the Sea, for example,

provides, in section 5 of part XII, for international rules and national legislation to prevent, reduce and control pollution of the marine environment. Section 6 of part XII of the Convention empowers coastal States themselves to take unilateral enforcement measures to enforce the principles in section 5 and to prevent or minimize injuries to themselves which may be caused by activities undertaken by other States. The most directly relevant article of this section is article 221 regarding measures to avoid pollution arising from maritime casualties. This article in fact grants unilateral management and monitoring competence to coastal States to take and enforce, pursuant to international law, measures beyond their territorial sea proportionate to the actual or threatened damage to protect their coastline or related interests against incidents which may reasonably be expected to result in major harmful consequences. Article 221 provides:

"Article 221

"Measures to avoid pollution arising from maritime casualties

"1. Nothing in this Part shall prejudice the right of States, pursuant to international law, both customary and conventional, to take and enforce measures beyond the territorial sea proportionate to the actual or threatened damage to protect their coastline or related interests, including fishing, from pollution or threat of pollution following upon a maritime casualty or acts relating to such a casualty, which may reasonably be expected to result in major harmful consequences.

"2. For the purposes of this article, 'maritime casualty' means a collision of vessels, stranding or other incident of navigation, or other occurrence on board a vessel or external to it resulting in material damage or imminent threat of material damage to a vessel or cargo."

256. Other relevant articles of section 6 are the following:

"Article 218

"Enforcement by port States

"1. When a vessel is voluntarily within a port or at an off-shore terminal of a State, that State may undertake investigations and, where the evidence so warrants, institute proceedings in respect of any discharge from that vessel outside the internal waters, territorial sea or exclusive economic zone of that State in violation of applicable international rules and standards established through the competent international organization or general diplomatic conference.

"2. No proceedings pursuant to paragraph 1 shall be instituted in respect of a discharge violation in the internal waters, territorial sea or exclusive economic zone of another State unless requested by that State, the flag State, or a State damaged or threatened by the discharge violation, or unless the violation has caused or is likely to cause pollution in the

internal waters, territorial sea or exclusive economic zone of the State instituting the proceedings.

"3. When a vessel is voluntarily within a port or at an off-shore terminal of a State, that State shall, as far as practicable, comply with requests from any State for investigation of a discharge violation referred to in paragraph 1, believed to have occurred in, caused, or threatened damage to the internal waters, territorial sea or exclusive economic zone of the requesting State. It shall likewise, as far as practicable, comply with requests from the flag State for investigation of such a violation, irrespective of where the violation occurred.

"4. The records of the investigation carried out by a port State pursuant to this article shall be transmitted upon request to the flag State or to the coastal State. Any proceedings initiated by the port State on the basis of such an investigation may, subject to section 7, be suspended at the request of the coastal State when the violation has occurred within its internal waters, territorial sea or exclusive economic zone. The evidence and records of the case, together with any bond or other financial security posted with the authorities of the port State, shall in that event be transmitted to the coastal State. Such transmittal shall preclude the continuation of proceedings in the port State.

"Article 219

"Measures relating to seaworthiness of vessels to avoid pollution

"Subject to section 7, States which, upon request or on their own initiative, have ascertained that a vessel within one of their ports or at one of their off-shore terminals is in violation of applicable international rules and standards relating to seaworthiness of vessels and thereby threatens damage to the marine environment shall, as far as practicable, take administrative measures to prevent the vessel from sailing. Such States may permit the vessel to proceed only to the nearest appropriate repair yard and, upon removal of the causes of the violation, shall permit the vessel to continue immediately.

"Article 220

"Enforcement by coastal States

"1. When a vessel is voluntarily within a port or at an off-shore terminal of a State, that State may, subject to section 7, institute proceedings in respect of any violation of its laws and regulations adopted in accordance with this Convention or applicable international rules and standards for the prevention, reduction and control of pollution from vessels when the violation has occurred within the territorial sea or the exclusive economic zone of that State.

"2. Where there are clear grounds for believing that a vessel navigating in the territorial sea of a State has, during its passage therein, violated laws and regulations of that State adopted in accordance with this Convention or applicable international rules and standards for the prevention, reduction and control of pollution from vessels, that State, without prejudice to the application of the relevant provisions of Part II, section 3, may undertake physical inspection of the vessel relating to the violation and may, where the evidence so warrants, institute proceedings, including detention of the vessel, in accordance with its laws, subject to the provisions of section 7.

"3. Where there are clear grounds for believing that a vessel navigating in the exclusive economic zone or the territorial sea of a State has, in the exclusive economic zone, committed a violation of applicable international rules and standards for the prevention, reduction and control of pollution from vessels or laws and regulations of that State conforming and giving effect to such rules and standards, that State may require the vessel to give information regarding its identity and port of registry, its last and its next port of call and other relevant information required to establish whether a violation has occurred.

"4. States shall adopt laws and regulations and take other measures so that vessels flying their flag comply with requests for information pursuant to paragraph 3.

"5. Where there are clear grounds for believing that a vessel navigating in the exclusive economic zone or the territorial sea of a State has, in the exclusive economic zone, committed a violation referred to in paragraph 3 resulting in a substantial discharge causing or threatening significant pollution of the marine environment, that State may undertake physical inspection of the vessel for matters relating to the violation if the vessel has refused to give information or if the information supplied by the vessel is manifestly at variance with the evident factual situation and if the circumstances of the case justify such inspection.

"6. Where there is clear objective evidence that a vessel navigating in the exclusive economic zone or the territorial sea of a State has, in the exclusive economic zone, committed a violation referred to in paragraph 3 resulting in a discharge causing major damage or threat of major damage to the coastline or related interests of the coastal State, or to any resources of its territorial sea or exclusive economic zone, that State may, subject to section 7, provided that the evidence so warrants, institute proceedings, including detention of the vessel, in accordance with its laws.

"7. Notwithstanding the provisions of paragraph 6, whenever appropriate procedures have been established, either through the competent international organization or as otherwise agreed, whereby compliance with requirements for bonding or other appropriate financial security has been assured, the coastal State if bound by such procedures shall allow the vessel to proceed.

"8. The provisions of paragraphs 3, 4, 5, 6 and 7 also apply in respect of national laws and regulations adopted pursuant to article 211, paragraph 6."

257. Article 11 of the Convention for the Prevention of Marine Pollution from Land-Based Sources" provides for a permanent monitoring system operating through the individual or joint efforts of member States. This article reads:

"ARTICLE 11

"The Contracting Parties agree to set up progressively, and to operate within the area covered by the present Convention, a permanent monitoring system allowing of:

- the earliest possible assessment of the existing level of marine pollution;

- the assessment of the effectiveness of measures for the reduction of marine pollution from land-based sources taken under the terms of the present Convention.

"For this purpose the Contracting Parties shall lay down the ways and means of pursuing individually or jointly systematic and ad hoc monitoring programmes. These programmes shall take into account the deployment of research vessels and other facilities in the monitoring area.

"The programmes will take into account similar programmes pursued in accordance with Conventions already in force and by the appropriate internaional organisations and Agencies."

Article 11 provides a flexible monitoring system. Parties to the Convention can set up individual or joint monitoring systems, on a continuous or on an ad hoc basis. This monitoring system also co-operates with appropriate international organizations and agencies. In addition, the Convention establishes a Commission with overall supervision over the implementation of the Convention as well as over the monitoring. Articles 15, 16 and 17 of the Convention provide:

"ARTICLE 15

"A Commission made of representatives of each of the Contracting Parties is hereby established. The Commission shall meet at regular intervals and at any time, when due to special circumstances it is so decided in accordance with the rules of procedure.

"ARTICLE 16

"It shall be the duty of the Commission:

"a) to exercise overall supervision over the implementation of the present Convention;

"b) to review generally the condition of the seas within the area to which the present Convention applies, the effectiveness of the control measures being adopted and the need for any additional or different measures;

"c) to fix, if necessary, in accordance with Article 3 (a), on the proposal of the Contracting Party or Parties bordering on the same watercourse and following a standard procedure, the limit to which the maritime area shall extend in this watercourse;

"d) to draw up, in accordance with Article 4 of the present Convention, programmes and measures for the elimination or reduction of pollution from land-based sources;

"e) to make recommendations in accordance with the provisions of Article 9;

"f) to receive and review information and distribute it to the Contracting Parties in accordance with the provisions of Articles 11, 12, and 17 of the present Convention;

"g) to make, in accordance with Article 13, recommendations regarding any amendment to the lists of substances included in Annex A of the present Convention;

"h) to discharge such other functions, as may be appropriate, under the terms of the present Convention.

"ARTICLE 17

"The Contracting Parties, in accordance with a standard procedure, shall transmit to the Commission:

"a) the results of monitoring pursuant to Article (11).

"b) the most detailed information available on the substances listed in the Annexes to the present Convention and liable to find their way into the maritime area.

"The Contracting Parties shall endeavour to improve progressively techniques for gathering such information which can contribute to the revision of the pollution reduction programmes adopted in accordance with Article 4."

258. Article 12 of the Convention obliges the contracting States to ensure compliance with the Convention and to take appropriate domestic measures to prevent and punish individuals who have violated its provisions. The domestic measures may be of legislative or administrative nature. Article 12 provides:

"1. Each Contracting Party undertakes to ensure compliance with the provisions of this Convention and to take in its territory appropriate measures to prevent and punish conduct in contravention of the provisions of the present Convention.

"2. The Contracting Parties shall inform the Commission of the legislative and administrative measures they have taken to implement the provisions of the above paragraph."

259. Article 13 of the Convention may also be interpreted as providing for a monitoring system. Under this article, the Contracting Parties assist one another in order to prevent incidents which may result in pollution from land-based sources, minimize and eliminate the impact of such incidents and exchange information to that end. 1/

260. The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter obligates the contracting parties to designate authorities with the competence to monitor the application of the Convention. Article VI of the Convention provides:

"1. Each Contracting Party shall designate an appropriate authority or authorities to:

"...

"d. monitor individually, or in collaboration with other Parties and competent international organizations, the condition of the seas for the purposes of this Convention."

261. Article 3 of the Convention for the Prevention of Pollution of Lake Constance also establishes a commission for monitoring and article 4 defines the tasks of the commission:

"Article 4

"The Commission shall:

"a) determine the quality of Lake Constance and the causes of its pollution;

1/ Article 13 provides:

"ARTICLE 13

"The Contracting Parties undertake to assist one another as appropriate to prevent incidents which may result in pollution from land-based sources, to minimize and eliminate the consequences of such incidents, and to exchange information to that end."

"b) regularly verify the quality of the waters of Lake Constance;

"c) discuss measures for remedying existing pollution and preventing all future pollution of Lake Constance and recommend them to the riparian States;

"d) discuss measures which any riparian State proposes to take in accordance with Article 1, paragraph 3, above;

"e) study the possibility of instituting regulations to preserve Lake Constance from pollution; consider the possible content of such regulations which shall, if appropriate, form the subject of another convention between the riparian States;

"f) concern itself with all other questions relating to control of pollution of Lake Constance."

262. A Tripartite Standing Committee has been established by Belgium, France and Luxembourg under a Protocol 2/ in order to study and monitor problems raised by the installation in the vicinity of the frontier of explosive materials for civil use and problems of water pollution. One of the functions of the Committee is to define the pollution factors, collect any appropriate technical opinions and assess each State's share of responsibility for the pollution. Likewise, by an exchange of notes 3/ on 22 October 1975 the Governments of France, the Federal Republic of Germany and Switzerland created an intergovernmental commission to deal with frontier problems including the examination of environmental problems.

263. Intergovernmental commissions have also been established for studying sources of and preventive measures against pollution in the Moselle and the Rhine. The Protocole entre les Gouvernements de la République fédérale d'Allemagne, de la République française et du Grand-Duché de Luxembourg concernant la constitution d'une commission internationale pour la protection de la Moselle contre la pollution provides inter alia:

"Article 2

"La Commission instituée en vertu de l'article premier du présent Protocole a pour objet d'établir une collaboration entre les services compétents des trois Gouvernements signataires en vue d'assurer la protection des eaux de la Moselle contre la pollution.

2/ Protocol between France, Belgium and Luxembourg to establish a tripartite standing Committee on polluted water (8 April 1950).

3/ Echange de notes du 22 octobre 1975 entre les Gouvernements de la République française, de la République fédérale d'Allemagne et le Conseil fédéral suisse concernant la création d'une commission intergouvernementale pour les problèmes de voisinage dans les régions frontalières.

"A cet effet la Commission peut:

a) préparer, faire effectuer toutes les recherches nécessaires pour déterminer la nature, l'importance, l'origine des pollutions et exploiter les résultats de ces recherches.

b) proposer aux Gouvernements signataires les mesures susceptibles de protéger la Moselle contre la pollution.

La Commission connaît en outre de toutes autres affaires que les Gouvernements signataires lui confient d'un commun accord."

264. A similar language is provided in article 2 of the Accord concernant la Commission internationale pour la protection du Rhin contre la pollution between the Federal Republic of Germany, France, Luxembourg, the Netherlands and Switzerland:

"Article 2

"1) La Commission doit:

"a) préparer, faire effectuer toutes les recherches nécessaires pour déterminer la nature, l'importance et l'origine des pollutions du Rhin et exploiter les résultats de ces recherches;

"b) proposer aux Gouvernements signataires les mesures susceptibles de protéger le Rhin contre la pollution;

"c) préparer les éléments d'éventuels arrangements entre les Gouvernements signataires concernant la protection des eaux du Rhin.

2) La Commission est, en outre, compétente pour toutes autres affaires que les Gouvernements signataires lui confient d'un commun accord."

265. In 1976, an international commission was created for the protection of the Rhine against pollution between the above countries and the European Economic Community. 4/

266. According to the Convention relative à la protection du Rhin contre la pollution chimique, an international commission should monitor the chemical substances discharged at the Rhine. The Commission modifies the list of prohibited substances and, in view of new scientific and other developments, makes recommendations. The following are the relevant provisions of the Convention:

4/ See Accord additionnel du 3 décembre 1976 concernant la Commission internationale pour la protection du Rhin contre la pollution.

"Article 2

1. ...

2. Les Gouvernements communiquent à la Commission Internationale pour la protection du Rhin contre la pollution (ci-après dénommée "la Commission Internationale"), conformément aux dispositions du paragraphe 2 de l'annexe III, les éléments de leur inventaire mis à jour régulièrement et au moins tous les trois ans.

...

Article 5

1. La Commission Internationale propose les valeurs-limites prévues au paragraphe 2 de l'article 3 et, si nécessaire, leur application aux rejets dans les égouts. Ces valeurs-limites sont fixées conformément à la procédure prévue à l'article 14. Après leur adoption, elles sont incluses dans l'annexe IV.

2. Ces valeurs-limites sont définies:

a) par la concentration maximale admissible d'une substance dans les rejets et,

b) si cela est approprié, par la quantité maximale admissible d'une telle substance, exprimée en unité de poids du polluant par unité d'élément caractéristique de l'activité polluante (par exemple, unité de poids par matière première ou par unité de produit).

Si cela est approprié, les valeurs-limites applicables aux effluents industriels sont fixées par secteur et par type de produit.

Les valeurs-limites applicables aux substances relevant de l'annexe I sont déterminées principalement sur la base:

- de la toxicité,

- de la persistance,

- de la bioaccumulation,

en tenant compte des meilleurs moyens techniques disponibles.

3. La Commission Internationale propose aux Parties contractantes les limites des délais visées au paragraphe 3 de l'article 3 en fonction des caractéristiques propres aux secteurs industriels concernés et, le cas échéant, aux types de produit. Ces limites sont fixées conformément à la procédure prévue à l'article 14.

/...

4. La Commission Internationale utilise les résultats obtenus aux points de mesure internationaux pour évaluer dans quelle mesure la teneur des eaux du Rhin en substances relevant de l'annexe I varie après application des dispositions précédentes.

5. La Commission Internationale peut, si nécessaire, du point de vue de la qualité des eaux du Rhin, proposer d'autres mesures destinées à réduire la pollution des eaux du Rhin, en tenant compte notamment de la toxicité, de la persistance et de la bioaccumulation de la substance considérée. Ces propositions sont adoptées conformément à la procédure prévue à l'article 14.

...

Article 12

1. Les Parties contractantes informent régulièrement la Commission Internationale de leurs expériences acquises lors de l'application de la présente Convention.

2. La Commission Internationale formule, le cas échéant, des recommandations, afin d'améliorer progressivement l'application de cette Convention.

Article 13

La Commission Internationale élabore des recommandations en vue d'atteindre des résultats comparables par l'emploi de méthodes appropriées de mesures et d'analyses.

Article 14

1. Les annexes I à IV, qui font partie intégrante de la présente Convention, peuvent être modifiées et complétées en vue de les adapter au développement scientifique et technique ou d'améliorer l'efficacité de la lutte contre la pollution chimique des eaux du Rhin.

2. A cette fin, la Commission Internationale recommande les modifications ou compléments qui lui paraissent utiles.

3. Les textes modifiés ou complétés entreront en vigueur après adoption unanime par les Parties contractantes."

267. Some multilateral agreements aim only at monitoring certain activities and at co-operation in minimizing injuries regardless of the liability issues. For example the Agreement for Co-operation in Dealing with Pollution of the North Sea by Oil has been designed for monitoring by immediate consultation and rapid co-operation among the signatories for combating oil pollution in the North Sea area. Some relevant provisions of the Agreement provide:

"Article 4

"Contracting Parties undertake to inform the other Contracting Parties about

"(a) their national organisation for dealing with oil pollution;

"(b) the competent authority responsible for receiving reports of oil pollution and for dealing with questions concerning measures of mutual assistance between Contracting Parties;

"(c) new ways in which oil pollution may be avoided and about new effective measures to deal with oil pollution."

"Article 6

"(1) For the sole purposes of this Agreement the North Sea area divided into the zones described in the Annex to this Agreement.

"(2) The Contracting Party within whose zone a situation of the kind is described in Article 1 occurs, shall make the necessary assessments of the nature and extent of any casualty or, as the case may be, of the type and approximate quantity of oil floating on the sea, and the direction and speed of movement of the oil.

"(3) The Contracting Party concerned shall immediately inform all the other Contracting Parties through their competent authorities of its assessments and of any action which it has taken to deal with the floating oil and shall keep the oil under observation as long as it is drifting in its zone.

"(4) The obligations of the Contracting Parties under the provisions of this Article with respect to the zones of joint responsibility shall be the subject of special technical arrangements to be concluded between the Parties concerned. These arrangements shall be communicated to the other Contracting Parties."

268. The main purpose of the Convention appears to be the institution of a co-operative monitoring system among its member States. This Convention is not concerned with liability and compensation.

269. Similarly the International Convention for the Conservation of Atlantic Tunas establishes a commission, in article III, in order, among other functions, to monitor the conditions of tuna fishery resources, to study and to appraise information concerning methods to ensure the maintenance of the population of tuna, etc. Article IV, enumerating the Commission's functions, provides:

"Article IV

"1. In order to carry out the objectives of this Convention the Commission shall be responsible for the study of the populations of tuna and tuna-like fishes (the Scombriformes with the exception of the families

Trichiuridae and Gempylidae and the genus Scomber) and such other species of fishes exploited in tuna fishing in the Convention area as are not under investigation by another international fishery organization. Such study shall include research on the abundance, biometry and ecology of the fishes; the oceanography of their environment; and the effects of natural and human factors upon their abundance. The Commission, in carrying out these responsibilities shall, insofar as feasible, utilise the technical and scientific services of, and information from, official agencies of the Contracting Parties and their political sub-divisions and may when desirable, utilise the available services and information of any public or private institution, organization or individual, and may undertake within the limits of its budget independent research to supplement the research work being done by governments, national institutions or other international organizations.

"2. The carrying out of the provisions in paragraph 1 of this Article shall include:

"(a) collecting and analysing statistical information relating to the current conditions and trends of the tuna fishery resources of the Convention area;

"(b) studying and appraising information concerning measures and methods to ensure maintenance of the populations of tuna and tuna-like fishes in the Convention area at levels which will permit the maximum sustainable catch and which will ensure the effective exploitation of these fishes in a manner consistent with this catch;

"(c) recommending studies and investigations to the Contracting Parties;

"(d) publishing and otherwise disseminating reports of its findings and statistical, biological and other scientific information relative to the tuna fisheries of the Convention area."

270. The Second Revised Draft Convention for the Protection of the Ozone Layer also provides for a continuous and systematic research and monitoring mechanism, either through co-operation among States or through competent international organizations. This mechanism is to do research and to identify elements which may effect the ozone layer and the consequences of those changes on human health. Article 3 of th draft Convention provides:

"Article 3

"RESEARCH AND SYSTEMATIC OBSERVATIONS

"1. The Contracting Parties undertake, as appropriate, to initiate and co-operate in, directly or through competent international bodies, the conduct of research generally on:

"(a) The physical, chemical, and dynamic processes that may affect the ozone layer;

"(b) The human health and other biological effects deriving from modifications of the ozone layer, particularly those resulting from changes in UV-B radiation;

"(c) Climatic effects deriving from modifications of the ozone layer;

"(d) Substances, practices, processes and activities that may affect the ozone layer, and their cumulative effects;

"(e) Alternative substances and technologies;

"(f) Related socio-economic matters;

as further elaborated in Annex I.

"2. The Contracting Parties undertake to promote or establish, as appropriate, directly or through competent international bodies and taking fully into account relevant on-going activities at both the national and international levels, joint or complementary programmes for systematic observation of the state of the ozone layer and other relevant parameters, and to provide the resulting data to world data centres in a regular and timely fashion, as elaborated in annex I.

"3. The Contracting Parties undertake to co-operate, directly or through international bodies, in ensuring the collection, availability and validation of observational data."

The Draft Convention is only concerned about research and monitoring. It is not concerned with liability and compensation.

271. Similarly, the Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil Thereof provides for a monitoring system or "verification" for compliance with treaty obligations. Such a monitoring function may be undertaken by signatories individually or in co-operation with each other. Nevertheless, when there are "reasonable" doubts about the fulfilment of treaty obligations, the State party which has the doubts and the State party which has given rise to such doubts by its activities are under obligation to co-operate and consult with the aim of removing such doubts. If the doubts were not removed, through procedures provided under article III of the Treaty, a State party may, in accordance with the provisions of the United Nations Charter, bring the matter to the attention of the Security Council. Article III of the Treaty provides:

"Article III

"1. In order to promote the objectives of and ensure compliance with the provisions of this Treaty, each State Party to the Treaty shall have the right to verify through observation the activities of other States Parties to the Treaty on the sea-bed and the ocean floor and in the subsoil thereof beyond the zone referred to in Article I, provided that observation does not interfere with such activities.

"2. If after such observation reasonable doubts remain concerning the fulfilment of the obligations assumed under the Treaty, the State Party having such doubts and the State Party that is responsible for the activities giving rise to the doubts shall consult with a view to removing the doubts. If the doubts persist, the State Party having such doubts shall notify the other States Parties, and the Parties concerned shall co-operate on such further procedures for verification as may be agreed, including appropriate inspection of objects, structures, installations or other facilities that reasonably may be expected to be of a kind described in Article I. The Parties in the region of the activities, including any coastal State, and any other Party so requesting, shall be entitled to participate in such consultation and co-operation. After completion of the further procedures for verification, an appropriate report shall be circulated to other Parties by the Party that initiated such procedures.

"3. If the State responsible for the activities giving rise to the reasonable doubts is not identifiable by observation of the object, structure, installation or other facility, the State Party having such doubts shall notify and make appropriate inquiries of States Parties in the region of the activities and of any other State Party. If it is ascertained through these inquiries that a particular State Party is responsible for the activities, that State Party shall consult and co-operate with other Parties as provided in paragraph 2 of this Article. If the identity of the State responsible for the activities cannot be ascertained through these inquiries, then further verification procedures, including inspection, may be undertaken by the inquiring State Party, which shall invite the participation of the Parties in the region of the activities, including any coastal State, and of any other Party desiring to co-operate.

"4. If consultation and co-operation pursuant to paragraphs 2 and 3 of this Article have not removed the doubts concerning the activities and there remains a serious question concerning fulfilment of the obligations assumed under this Treaty, a State Party may, in accordance with the provisions of the Charter of the United Nations, refer the matter to the Security Council, which may take action in accordance with the Charter.

"5. Verification pursuant to this Article may be undertaken by any State Party using its own means, or with the full or partial assistance of any other State Party, or through appropriate international procedures within the framework of the United Nations and in accordance with its Charter.

"6. Verification activities pursuant to this Treaty shall not interfere with activities of other States Parties and shall be conducted with due regard for rights recognized under international law, including the freedoms of the high seas and the rights of coastal States with respect to the exploration and exploitation of their continental shelves."

272. Similarly, the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques approved by the General Assembly on 10 December 1976, prohibiting the hostile uses of weather modification techniques, provides for a monitoring system. Consultation and co-operation under article V of this Convention may also take place through appropriate international organizations. In addition, the depository, the United Nations, within one month of the receipt of a request from any signatory of the Convention, shall convene a consultative committee of experts. Any signatory may appoint an expert to the Committee. The Committee is a fact-finding organ, which will submit its findings to the depository. The findings will be circulated among the signatories. Article V of the Convention provides:

"Article V

"1. The States Parties to this Convention undertake to consult one another and to co-operate in solving any problems which may arise in relation to the objectives of, or in the application of the provisions of, the Convention. Consultation and co-operation pursuant to this article may also be undertaken through appropriate international procedures within the framework of the United Nations and in accordance with its Charter. These international procedures may include the services of appropriate international organizations, as well as of a Consultative Committee of Experts as provided for in paragraph 2 of this article.

"2. For the purposes set forth in paragraph 1 of this article, the Depositary shall, within one month of the receipt of a request from any State Party to this Convention, convene a Consultative Committee of Experts. Any State Party may appoint an expert to the Committee whose functions and rules of procedure are set out in the annex, which constitutes an integral part of this Convention. The Committee shall transmit to the Depositary a summary of its findings of fact, incorporating all views and information presented to the Committee during its proceedings. The Depositary shall distribute the summary to all States Parties.

"3. Any State Party to this Convention which has reason to believe that any other State Party is acting in breach of obligations deriving from the provisions of the Convention may lodge a complaint with the Security Council of the United Nations. Such a complaint should include all relevant information as well as all possible evidence supporting its validity.

"4. Each State Party to this Convention undertakes to co-operate in carrying out any investigation which the Security Council may initiate, in accordance with the provisions of the Charter of the United Nations, on the

basis of the complaint received by the Council. The Security Council shall inform the States Parties of the results of the investigation.

"5. Each State Party to this Convention undertakes to provide or support assistance, in accordance with the provisions of the Charter of the United Nations, to any State Party which so requests, if the Security Council decides that such Party has been harmed or is likely to be harmed as a result of violation of the Convention."

273. The function of the Consultative Committee of Experts and its rules of procedure are defined in an annex to the Convention, which reads:

"Annex to the Convention

"Consultative Committee of Experts

"1. The Consultative Committee of Experts shall undertake to make appropriate findings of fact and provide expert views relevant to any problem raised pursuant to paragraph 1 of article V of this Convention by the State Party requesting the convening of the Committee.

"2. The work of the Consultative Committee of Experts shall be organized in such a way as to permit it to perform the functions set forth in paragraph 1 of this annex. The Committee shall decide procedural questions relative to the organization of its work, where possible by consensus, but otherwise by a majority of those present and voting. There shall be no voting on matters of substance.

"3. The Depositary or his representative shall serve as the Chairman of the Committee.

"4. Each expert may be assisted at meetings by one or more advisers.

"5. Each expert shall have the right, through the Chairman, to request from States, and from international organizations, such information and assistance as the expert considers desirable for the accomplishment of the Committee's work."

Furthermore, every State party to the Convention undertakes to take measures within its own constitutional framework to prevent any activity within its jurisdiction or control in violation of the treaty. Article IV of the Convention provides:

"Article IV

"Each State Party to this Convention undertakes to take any measures it considers necessary in accordance with its constitutional processes to prohibit and prevent any activity in violation of the provisions of the Convention anywhere under its jurisdiction or control."

274. However, other conventions include provisions regarding liability and compensation, but their basic aims are prevention or minimization of injuries through monitoring and co-operation. For example, articles 11 and 13 of the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region provide for co-operation among contracting States to monitor activities in order to prevent injuries to the area covered under the Convention. They also provide that States shall co-operate in notification of and providing assistance during emergency situations. Articles 11 and 13 read as follows:

"Article 11

"Co-operation in Cases of Emergency

"1. The Contracting Parties shall co-operate in taking all necessary measures to respond to pollution emergencies in the Convention area, whatever the cause of such emergencies, and to control, reduce or eliminate pollution or the threat of pollution resulting therefrom. To this end, the Contracting Parties shall, individually and jointly, develop and promote contingency plans for responding to incidents involving pollution or the threat thereof in the Convention area.

"2. When a Contracting Party becomes aware of cases in which the Convention area is in imminent danger of being polluted or has been polluted, it shall immediately notify other States likely to be affected by such pollution, as well as the competent international organizations. Furthermore, it shall inform, as soon as feasible, such other States and competent international organizations of measures it has taken to minimize or reduce pollution or the threat thereof."

"Article 13

"Scientific and Technical Co-operation

"1. The Contracting Parties undertake to co-operate, directly and, when appropriate, through the competent international and regional organizations, in scientific research, monitoring and the exchange of data and other scientific information relating to the purposes of this Convention.

"2. To this end, the Contracting Parties undertake to develop and co-ordinate their research and monitoring programmes relating to the Convention area and to ensure, in co-operation with the competent international and regional organizations, the necessary links between their research centres and institutes with a view to producing compatible results. With the aim of further protecting the Convention area, the Contracting Parties shall endeavour to participate in international arrangements for pollution research and monitoring.

"3. The Contracting Parties undertake to co-operate, directly and, when appropriate, through the competent international and regional organizations,

in the provision to other Contracting Parties of technical and other assistance in fields relating to pollution and sound environmental management of the Convention area, taking into account the special needs of the smaller island developing countries and territories."

Paragraph 3 of article 13 requires special attention to be paid to the needs of smaller island developing countries and territories in the region.

Bilateral agreements

275. Monitoring activities, particularly those taking place near frontier areas and relating to a resource shared between States, have become part of bilateral agreements regarding utilization of frontier resources. Bilateral agreements have also incorporated monitoring of activities unrelated to frontier resources, but in which both State parties have an interest. Monitoring may be conducted either by the Contracting States jointly or through a Commission.

276. Monitoring of the operation of hydraulic system on the frontier waters of Romania and Yugoslavia can apparently be done by either State. 5/ Under articles 9 and 10 of chapter I of the Agreement between the two States the parties agreed to communicate to one another any laws or regulations in force or going to be adopted regarding their hydraulic system, their forestry and fisheries. Thus each party, on the request of the other, shall provide certain data or information regarding the hydraulic system. Articles 9 and 10 of chapter I provide:

"Article 9

"The two States shall communicate to one another any laws or other regulations which are now in force or which may be promulgated in the future, regarding the hydraulic system, the forestry system and fisheries: they shall also communicate to one another their official periodicals concerning hydrometrical, hydrological, meteorological and geological data collected in their respective territories which may be of assistance in the study of the hydraulic system.

"Article 10

"When either State requests, for purposes of study, certain data or information regarding the hydraulic system of the other State, the latter undertakes, in the absence of any legitimate objection to supply them."

277. Monitoring the environment in a co-ordinated manner has been agreed upon by Mexico and the United States in their 1983 Agreement. 6/ For the purposes of monitoring of polluting activities, this Agreement obligates the parties to consult each other on the measurement and analysis of polluting elements in the border area. Paragraph 2 of article 15 of the Agreement provides:

5/ General Convention concerning the Hydraulic System concluded between the Kingdom of Romania and the Kingdom of Yugoslavia (14 December 1931).

6/ Agreement between the United States of America and the United Mexican States on Co-operation for the Protection and Improvement of the Environment in the Border Area, 14 August 1983. Article 6 of the Agreement provides:

"ARTICLE 6

"To implement this Agreement, the Parties shall consider and, as appropriate, pursue in a coordinated manner practical, legal, institutional and technical measures for protecting the quality of the environmental in the border area. Forms of cooperation may include: co-ordination of national programs; scientific and educational exchanges; environmental monitoring; environmental impact assessment; and periodic exchanges of information and data on likely sources of pollution in their respective territory which may produce environmentally polluting incidents, as defined in an annex to this Agreement."

"In order to undertake the monitoring of polluting activities in the border area, the parties shall undertake consultations relating to the measurement and analysis of polluting elements in the border area."

278. The local authorities of Yugoslavia and Austria are obligated, under their 1954 Agreement, 7/ to advise each other, as quickly as possible, of any danger from high water or ice or any other impending danger which comes into their notice in connection with the river Mura. Article 7 of the Agreement provides:

"Article 7

"The local authorities of the Contracting States shall advise each other, by the quickest possible means, of any danger from high water or ice and of any other impending danger which comes to their notice in connexion with the Mura. The same shall apply to the frontier waters of the Mura where such dangers come to the notice of the local authorities."

279. In an Agreement between the Federal Republic of Germany and Norway relating to the transmission of petroleum by pipeline, 8/ the monitoring of the operation is divided between the States involved. The search and the removal of any mines, or other explosive devices, lying on the sea-bed route of the pipeline, in the continental shelf or territorial sea of the Federal Republic of Germany is the responsibility of that Government. Paragraph 2 of article 7 of the Agreement provides:

"2. The Government of the Federal Republic of Germany is prepared, to the extent that available technical facilities are adequate and other conditions so permit, to search for and remove any mines, or other explosive devices, lying on or projecting upwards from the sea bed on the pipeline route in the continental shelf or territorial sea of the Federal Republic of Germany."

7/ Protocol to the Agreement between the Federal People's Republic of Yugoslavia and the Republic of Austria concerning water economy questions in respect of the frontier sector of the Mura and the frontier waters of the Mura (the Mura Agreement) (27 November 1954).

8/ Agreement between the Federal Republic of Germany and the Kingdom of Norway relating to the transmission of petroleum by pipeline from the Ekofisk field (16 January 1974).

280. The final safety clearance of the pipeline is the responsibility of the Norwegian Government after consultation with the German Government. Paragraph 2 of article 8 provides:

> "2. The final safety clearance of the pipeline shall be given by the Norwegian Government after consultation with the Government of the Federal Republic of Germany on the basis of existing German and Norwegian law and this Agreement."

281. Thus, under article 9 of the above Agreement, the competent supervisory authorities of each contracting party shall have the right to inspect the pipeline facilites, including those situated in the territorial jurisdiction of the other State. This article provides:

"Article 9

> "1. To the extent required for the monitoring of safety regulations relating to the construction, laying and operation of the pipeline, the competent supervisory authorities of each Contracting Party shall have the right to inspect the pipeline facilities, including those situated in the continental shelf or national territory of the other State, and to obtain information for that purpose.
>
> "2. The details of the procedure shall be agreed upon by the competent supervisory authorities of the two Contracting Parties."

282. And finally, the issuance of new licences, as well as altering the existing ones relating to the operation of the pipeline, should be under the joint control of the two States. This is a joint control and monitoring of the activities of private parties, affecting States. Article 10 of this treaty deals with the control and monitoring of the activities of operating companies by extending or cancelling their licences. 9/ Under this article, both Norway and the Federal

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9/ Ibid. Article 10 of the Agreement reads:

"Article 10

> "1. The substantive content of licences, including their period of validity, shall be agreed upon by the two Governments on the basis of the law in force and this Agreement.
>
> "2. A copy of the licence or licences issued by one Government shall be made available to the other Government.
>
> "3. No licences shall be altered or assigned to a new licensee by the Government concerned, without prior consultation with the other Government.

Republic of Germany shall agree upon the substantive content of licences as well as any alteration and issuance of new licences. In the case of serious or repeated violations of the terms of a licence, the Government concerned may revoke the licence but only after prior consultation with the other Government. Control over the substantive content of licences is, of course, an effective means of controlling the activities of the operating entity. Notice that this Agreement is unrelated to the utilization of a joint frontier resource; it is related to an operation with economic benefits to both States.

283. Co-operation in management and monitoring through bilateral agreements has also been extended to averting danger. Article 19 of an agreement between Hungary and the Soviet Union, 10/ in addition to the requirement of gathering and exchange of information concerning the condition and the level of their frontier rivers for averting danger from floods, provides that the parties shall agree upon a regular system of signals to be used during periods of high water or drifting ice. This agreement does not itself establish a monitoring system; it urges the parties to agree upon such a system. Under article 19, the exchange of information is in the spirit of co-operation and delay or failure in communication does not constitute grounds for claims to compensation for damage caused by flooding or drifting ice:

> "Article 19. The competent authorities of the Contracting Parties shall exchange information concerning the level of rivers with which the Contracting Parties are concerned, and concerning ice conditions in such rivers, if this information may help to avert danger from floods or from drifting ice. The said authorities shall also agree upon a regular system of signals to be used during periods of high water or drifting ice. Delay in communicating, or failure to communicate, such information shall not constitute ground for a claim to compensation for damage caused by flooding or drifting ice."

284. The concept of monitoring involving advance notification of danger and the use of warning systems has been incorporated in a number of other agreements. Paragraph 3 of article 17 of an agreement between Norway and the Soviet Union 11/ requires, in the case of forest fire, the contracting party in whose territory the

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(continued)

> "4. In the event of serious or repeated violations of the terms of a licence, the Government concerned may revoke such licence but not without prior consultation with the other Government."

10/ Treaty between the Government of the Union of Soviet Socialist Republics and the Government of the Hungarian People's Republic concerning the régime of the Soviet-Hungarian State frontier and Final Protocol (24 February 1950).

11/ Agreement between the Royal Norwegian Government and the Government of the Union of Soviet Socialist Republics concerning the régime of the Norwegian-Soviet frontier and procedure for settlement of frontier disputes and incidents (29 December 1949).

danger arises to immediately notify the other party so that necessary measures may be taken to stop the fire at the frontier. That paragraph provides:

> "3. If a forest fire threatens to spread across the frontier, the Contracting Party in whose territory the danger arises shall forthwith notify the other Contracting Party so that the necessary measures may be taken to stop the fire at the frontier."

285. An identical paragraph is included in article 17 of an agreement between Finland and the Soviet Union. 12/ Paragraph 3 of article 17 of this Agreement provides:

> "3. If a forest fire threatens to spread across the frontier, the Contracting Party in whose territory the threat arises shall forthwith notify the other Contracting Party so that necessary measures may be taken to localize the fire."

286. Hungary and Austria have also agreed 13/ to notify each other as quickly as possible of any danger of flood, ice or other danger arising in connection with frontier waters which comes to their attention. Article 11 of this Treaty provides:

"Article 11

"Warning service

> "The authorities of the Contracting Parties, particularly the hydrographic service and local authorities, shall notify each other as quickly as possible of any danger of flood or ice or other danger arising in connexion with frontier waters which comes to their attention."

287. By an exchange of notes, France and the Soviet Union 14/ have agreed on immediately notifying each other of any accidental occurrence or any other unexplained incident that could lead to the explosion of one of their nuclear weapons which may have harmful effects on the other party. Provisions 1 and 2 of the above instrument read as follows:

12/ Agreement between the Government of the Union of Soviet Socialist Republics and the Government of the Republic of Finland concerning the régime of the Soviet-Finnish frontier (9 December 1948).

13/ Treaty between the Hungarian People's Republic and the Republic of Austria concerning the regulation of water economy questions in the frontier region (9 April 1956).

14/ Exchange of notes between France and the Union of Soviet Socialist Republics on prevention of accidental or unauthorized use of nuclear weapons (16 July 1976).

"1. Each Party undertakes to maintain and, possibly, improve, as it deems necessary, its existing organizational and technical arrangements to prevent the accidental or unauthorized use of nuclear weapons under its control.

"2. The two Parties undertake to notify each other immediately of any accidental occurrence or any other unexplained incident that could lead to the explosion of one of their nuclear weapons and could be construed as likely to have harmful effects on the other Party."

288. Mutual assistance in cases of accident during blasting operations is incorporated in article 20 of an agreement between Poland and the German Democratic Republic 15/ regarding navigation on their frontier river. The parties undertake to come to each other's assistance subject to reimbursement of the expenses entailed in the provision of such assistance. This article provides:

"Article 20

"In the event of damage or accident during blasting operations, each Party undertakes to come to the other's assistance, subject to reimbursement of the expenses entailed in the provision of such assistance."

This mutual assistance provision is only a part of an entire co-operation system established between the two States in the utilization of their joint waters. The co-operation system divides the monitoring and management of the joint waters between Poland and the German Democratic Republic. Accordingly, each contracting party shall take precautions against flooding on its own territory and, where necessary, inform the other party of the danger of a burst in any dike (art. 21). If a dike bursts, the two parties shall immediately combine their efforts to repair the damage (art. 21).

289. In at least one bilateral agreement prevention of danger may be undertaken by one State solely, while the other contracting Party reimburses the former for the expenses of such preventive measures. In the Treaty between Canada and the United States of America relating to co-operative development of the water resources of the Columbia River basin, Canada has agreed to control flooding of the river under paragraphs 2 (a), 2 (b) and 3 of article IV. The United States, however, has agreed to reimburse Canada for such flood control measures. Article VI of the agreement specifies the payment:

15/ Agreement between the Government of the Polish Republic and the Government of the German Democratic Republic concerning navigation in frontier waters and the use and maintenance of frontier waters (6 February 1952).

"Article VI

"Payment for Flood Control

"1. For the flood control provided by Canada under Article IV (2) (a) the United States of America shall pay Canada in United States funds:

"(a) 1,200,000 dollars upon the commencement of operation of the storage referred to in subparagraph (a) (i) thereof,

"(b) 52,100,000 dollars upon the commencement of operation of the storage referred to in subparagraph (a) (ii) thereof, and

"(c) 11,100,000 dollars upon the commencement of operation of the storage referred to in subparagraph (a) (iii) thereof.

"2. If full operation of any storage is not commenced within the time specified in Article IV, the amount set forth in paragraph (i) of this Article with respect to that storage shall be reduced as follows:

"(a) under paragraph (i) (a), 4,500 dollars for each month beyond the required time,

"(b) under paragraph (i) (b), 192,100 dollars for each month beyond the required time, and

"(c) under paragraph (1) (c), 40,800 dollars for each month beyond the required time.

"3. For the flood control provided by Canada under Article IV (2) (b) the United States of America shall pay Canada in United States funds in respect only of each of the first four flood periods for which a call is made 1,875,000 dollars and shall deliver to Canada in respect of each and every call made, electric power equal to the hydroelectric power lost by Canada as a result of operating the storage to meet the flood control need for which the call was made, delivery to be made when the loss of hydroelectric power occurs.

"4. For each flood period for which flood control is provided by Canada under Article IV (3) the United States of America shall pay Canada in United States funds:

"(a) the operating cost incurred by Canada in providing the flood control, and

"(b) compensation for the economic loss to Canada arising directly from Canada foregoing alternative uses of the storage used to provide the flood control.

"5. Canada may elect to receive in electric power, the whole or any portion of the compensation under paragraph (4) (b) representing loss of hydroelectric power to Canada."

290. When the source and the cause of transboundary injuries are disputed, neighbouring States have concluded agreements for co-operation, mutual consultation and monitoring to determine the source and the cause of the injury. The most recent agreement for that purpose was concluded between Canada and the United States on 23 August 1983 16/ to determine the cause of acid rain which has caused injuries both in Canada and in the United States. That Agreement called on Canada and the United States to monitor the flow of pollution from industrial plants in Ohio and Ontario, regarded as the prime sources of the pollution that has damaged forests on both sides of the border and killed fish and plant life in hundreds of lakes in New York's Adirondacks as well as in New England and eastern Canada. A scientific experiment was conducted under the Agreement and was called Captex, 17/ an acronym for cross-Appalachian trace experiment. That experiment was expected to show whether or how the pollutants are carried over long distances by wind currents in the atmosphere.

16/ For the text of the Agreement, see International Legal Materials (1983), vol. XXII, p. 1017. The Canadians' concern was reflected in The New York Times as follows:

> "The Canadian Government had argued in recent years that the breadth of acid rain pollution demanded urgent action, but the United States Government had maintained that there is insufficient evidence to tie the death of lakes to the flow of pollutants from industrial plants." [The New York Times, 24 August 1983, p. A.3, col. 4.]

17/ The Captex experiment began in September 1983 for a six-week period.

Judicial decisions and State practice other than agreements

291. Measures preventing injuries may be taken by States which may be injured as a result of an activity. Such measures may involve the adoption of national legislation and other regulatory requirements.

292. Prior to and during the Eniwetok Atoll nuclear tests series, the United States unilaterally undertook measures to minimize injuries and to monitor the radioactive fall-out from the activity. Thus, the United States stated that it will conduct the tests only when the forecast pattern of significant fall-out is entirely within the danger area. 18/ Fall-out predictions were dependent upon weather information. Admitting that the weather data normally available in the Pacific Ocean was inadequate for the needs of testing, the United States made special arrangements to obtain additional data. Thus 13 special United States weather stations, located within several hundred miles of the testing ground, participated in a weather network reporting to a central station. Those stations were staffed by military and civilian meteorologists. Moreover, weather reconnaissance was carried out by employing aircraft, ships, balloons and rockets.

293. The United States used advance weather monitoring and forecasting systems. 19/ It used computers which mechanized most of the mathematical procedures involved. Use of the computers apparently made it possible to forecast rapidly. Models of the clouds produced by previous large-scale nuclear detonations had been developed with the expectation to improve fall-out predictions.

294. A danger zone was established to which access by unauthorized persons was denied. All ships, aircraft and personnel had been cautioned to remain clear of the area. In addition, the widest possible publicity about the test and the danger area was given through marine, aviation and international organizations.

295. Regular air and sea searches of the area were conducted prior to the start of operations. Before each shot, the patrol of the danger area was intensified, particularly in the area where fall-out was forecast. The United States Atomic Energy Commission issued regulations which prohibited entry into the danger area of United States citizens and all other persons subject to the jurisdiction of the United States, its territories and possessions. 19/ Safety personnel were stationed in the designated area so that, in the event of significant fall-out in an inhabited area, they could assist the inhabitants in taking safety measures. 20/ A safety office was stationed on nearby inhabited atolls and at weather stations of the weather-reporting network. In the unlikely event of significant fall-out in an inhabited area, the monitors were to warn the

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18/ Whiteman, Digest of International Law, vol. 4, p. 588.

19/ Whiteman, op. cit., p. 589.

20/ Ibid., pp. 589-590.

inhabitants and advise and assist them in taking safety measures. The monitors also had trained the Marshallese (local inhabitants) medical practitioners and health aides in basic emergency measures.

296. Measurements of radioactivity were also carried out outside the danger area to monitor injury possibly resulting from resources commonly within the shared domain and subject to shared exploitation of States, for example, fish. Based on experience, the United States believed that outside the testing area, resulting quantities of radioactivity in edible sea foods would lead to exposure which would be very small compared to the limits for public exposure recommended by the United States National Committee for Radiation Protection and Measurement. Nevertheless, the United States designed a programme of study to explore the ultimate destination and behaviour of radioactivity in the sea water and in marine organisms. 21/ Sweeps by United States Navy vessels both during and after the tests were to include such measures as taking continuous readings of radioactivity in surface water, sampling of water at various depths, catching of fish and other marine organisms for analysis for radioactivity. Daily radiation readings and filter samples were taken and sent for analysis. 22/ The Public Health Service monitoring stations also reported data to the health officers of the States or territories in which the stations were located. They were manned by trained technicians from State health departments, local universities and scientific institutions. Another network in the United States gathered data which was used in a long-range scientific study of the behaviour of radioactive materials in the environment and their effect on man. 22/

297. Samples of dust, soil, milk, cheese and animal bones were collected from around the world and analysed. That programme was part of a study of the world-wide distribution and uptake of radioactive fission products. 22/ Fall-out monitoring also occurred within the United States. 23/ Monitoring was carried out throughout the world in order to make an early assessment of any potential injury to human life. 24/

298. Great Britain also adopted a system for monitoring the Christmas Island nuclear tests. 25/ A danger area was declared and all shipping and aircraft had been warned to keep clear of this area. The warnings were apparently issued far in advance so that people were clearly aware of the situation. Weather stations, weather ships and meteorological reconnaissance flights by aircraft provided continuous meteorological information during the period of the tests. The monitoring system placed into effect resembled that of the United States in its Eniwetok Atoll nuclear testing.

21/ Ibid., p. 590.

22/ Ibid., p. 591.

23/ Ibid., p. 590.

24/ Ibid., pp. 591-592.

25/ Ibid., p. 598.

299. The United States undertook unilateral monitoring of Mexican construction of highways in the Smugglers and Goat Canyons. Although the United States negotiated with Mexico prior to the construction of the highway regarding its planning, it nevertheless considered it appropriate for itself to monitor the result of the construction and its impact upon the United States. The monitoring was considered by a group of engineers who were asked by the Government to analyse the construction plan regarding whether or not the actual construction would include sufficient safety measures to prevent any injuries to the United States. In a letter to the Mexican Foreign Office, the United States Ambassador to Mexico wrote:

> "As a result of the technical discussions, several modifications of the original plans were understood to have been agreed upon. ... [These modifications were listed.]
>
> "It was believed by the United States engineers that these modifications would barely meet the minimum standards for such embankments.
>
> "When construction was resumed, culverts were installed at the base of the embankment at the Arroyo de las Cabras [Smuggler's Canyon] but were encased in concrete only up to about two-thirds of their height [instead of to a height of about four inches above the top of the culverts]. Since the culverts are now being covered with fill, it seems improbable that the State of Baja California intends to complete the encasement and erect the cutoff collars at the Arroyo de las Cabras. The remedial measures have not been started at the Arroyo de San Antonio.
>
> "In the opinion of engineers of the United States Government who are closely familiar with the recent construction, the embankment at Arroyo de San Antonio [Goat Canyon] will fail in certain circumstances of flood, and the modifications made at the Arroyo de las Cabras are not adequate to ensure its security. It too must be expected to fail in certain circumstances. Since the rainy season in that area begins as a rule in November, when considerable runoff in the arroyos must be anticipated, the matter is not only grave but urgent.
>
> "My Government has accordingly instructed me to urge the Government of Mexico to take appropriate steps to prevent the damage to property and the injury to persons that are likely to result from the improper construction of the highway. I urge particularly that further construction at the Arroyo de las Cabras be suspended until arrangements can be made by the Government of Mexico for adoption of features essential for the security of the embankment in that canyon, and that the embankment at the Arroyo de San Antonio be opened to prevent the accumulation of flood water pending installation of similar modifications that canyon." 26/

300. Besides acting unilaterally to monitor and assess the extraterritorial impact of activities, States in the past acted jointly in the impact monitoring process.

26/ Whiteman, op. cit., vol. 6, pp. 261-262.

For example, the United States acted in conjunction with Mexico to impede the spread of foot-and-mouth disease by forming a joint commission. 27/ A joint office was established which was responsible for actively directing a campaign against the disease and for the expenditure of funds provided by the two Governments for that purpose. Also, a Mexican-United States Commission for the Eradication of Foot-and-Mouth Disease was established by the two Governments at Mexico City, with an equal number of members appointed by the Mexican Secretary of Agriculture and Animal Industry and by the United States Secretary of Agriculture.

301. A far more detailed régime for monitoring and management of activities with harmful extraterritorial impact was put into action as a result of the Trail Smelter decision. Among its various detailed provisions, it called for placement of permanent instruments to monitor fumes from the smelter:

"I. Instruments

"A. The instruments for recording meteorological conditions shall be as follows:

"(a) Wind Direction and Wind Velocity shall be indicated by any of the standard instruments used for such purposes to provide a continuous record and shall be observed and transcribed for use of the Smoke Control Office at least once every hour.

"(b) Wind Turbulence shall be measured by the Bridled Cup Turbulence Indicator. This instrument consists of a light horizontal wheel around whose periphery are twenty-two equally-spaced curved surfaces cut from one-eighth inch aluminium sheet and shaped to the same-sized blades or cups. This wind-sensitive wheel is attached to an aluminium sleeve rigidly screwed to one end of a three-eighth inch vertical steel shaft supported by almost frictionless bearings at the top and bottom of the instrument frame. The shaft of the wheel is bridled to prevent continuous rotation and is so constrained that its angle of rotation is directly proportional to the square of the wind velocity. One complete revolution of the anemometer shaft corresponds to a wind velocity of 36 miles per hour and, with eighteen equally spaced contact points on the commutator, one make and one break in the circuit is equivalent to a change in wind velocity of two miles per hour, recorded on a standard anemograph. (For further detail, see the Final Report of the Technical Consultants, p. 209.)

"The instruments noted in (a) and (b) above, shall be located at the present site near the zinc stack of the Smelter or at some other location not less favorable for such observations.

27/ Ibid., p. 266.

"(c) Atmospheric temperature and barometric pressure shall be determined by the standard instruments in use for such meteorological observations.

"B. Sulphur dioxide concentrations shall be determined by the standard recorders, which provide automatically an accurate and continuous record of such concentrations.

"One recorder shall be located at Columbia Gardens, as at present installed with arrangements for the automatic transcription of its record to the Smoke Control Office at the Smelter. A second recorder shall be maintained at the present site near Northport. A third recorder shall be maintained at the present site near Waneta, which recorder may be discontinued after December 31, 1942." 28/

302. Records of the data thus collected were to be kept. 29/ A summary of the smelter operation covering the daily sulphur balances was to be compiled monthly and copies were to be sent to the Government of the United States and of the Dominion of Canada. In addition, the structure of the stacks was regulated. 29/ Sulphur dioxide was allowed to be discharged into the atmosphere from smelting operations of zinc and lead plants at a height no lower than that of the stacks at that time. In case of the cooling of the stacks by a lengthy shutdown, gases containing sulphur dioxide were not to be emitted until the stacks had been heated to normal operating temperatures by hot gases free of sulphur dioxide and standards of maximum hourly emissions were to be carefully adhered to. 30/

303. The permanent régime also provided for amendment or modification of the monitoring system:

"VI. Amendment or Suspension of the Régime

"If at any time after December 31, 1942, either Government shall request an amendment or suspension of the régime herein prescribed and the other Government shall decline to agree to such request, there shall be appointed by each Government, within one month after the making or receipt respectively of such request, a scientist of repute; and the two scientists so appointed shall constitute a Commission for the purpose of considering and acting upon such request. If the Commission within three months after appointment fails to agree upon a decision, they shall appoint jointly a third scientist who shall be Chairman of the Commission; and thereupon the opinion of the majority, or in the absence of any majority opinion, the opinion of the Chairman shall be decisive; the opinion shall be rendered within one month after the choice of

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28/ Reports of International Arbitral Awards, vol. III, pp. 1974-1975.

29/ Ibid., p. 1975.

30/ Ibid., p. 1976.

the Chairman. If the two scientists shall fail to agree upon a third scientist within the prescribed time, upon the request of either, he shall be appointed within one month from such failure by the President of the American Chemical Society, a scientific body having a membership both in the United States, Canada, Great Britain and other countries.

"Any of the periods of time herein prescribed may be extended by agreement between the two Governments.

"The Commission of two, or three scientists as the case may be, may take such action in compliance with or in denial of the request above referred to, either in whole or in part, as it deems appropriate for the avoidance or prevention of damage occurring in the State of Washington. The decision of the Commission shall be final, and the Governments shall take such action as may be necessary to ensure due conformity with the decision, in accordance with the provisions of Article XII of the Convention.

"The compensation of the scientists appointed and their reasonable expenditures shall be paid by the Government which shall have requested a decision; if both Governments shall have made a request for decision, such expenses shall be shared equally by both Governments; provided, however, that if the Commission in response to the request of the United States shall find that notwithstanding compliance with the régime in force damage has occurred through fumes in the State of Washington, then the above expenses shall be paid by the Dominion of Canada." 31/

The tribunal also recommended that the acting State, Canada, maintain a scientific staff for the purposes of unilateral monitoring. 31/ While the tribunal refrained from making it a part of the prescribed monitoring régime, it stated that, in its opinion, it would be to the clear advantage of Canada if, during the interval between the date of the filing of the final report and 31 December 1942 (when the prescribed monitoring régime was to be put into effect), Canada would continue, at its own expense, the maintenance of experimental and observational work by two scientists similar to that which was established by the tribunal before and had been in operation during the trial period since 1938. The tribunal thought such continuance of investigation would provide additional valuable data both for the purpose of testing and the effective operation of the régime then prescribed and for the purpose of obtaining information as to the possibility or necessity of improvements in it. 31/

304. A unilateral monitoring was conducted by Belgium when the Yser, its resort area near France, was affected by air pollution, the cause of which was undetermined. The pollution had affected tourism in that area. The Belgian Government, however, suspected that the pollution was caused by industries in

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31/ Ibid., p. 1978.

Dunkerque, France. 32/ The Belgian Parliament asked the Government to negotiate with France to resolve the problem. The Government replied that although it was suspected that the pollution was caused by industries in Dunkerque, it did not yet have any facts to verify that. It stated that it was monitoring the pollution to determine its direction. Once it was sure that the pollution was coming from the direction of Dunkerque, it intended to take the matter up with the French Government.

305. In a debate in the Belgian Parliament, it was stated that the frontier river, Thure, shared by France and Belgium, was suffering substantially from pollution caused by some factories involved with cutting stones and washing them in the river. Those factories were operating both in the French as well as the Belgian side. The Belgians, apparently took some measures to reduce, but not to eliminate, the pollution caused by the operation. 33/ The French, however, did nothing. The issue was raised by the Belgian Parliament and the Government replied that it had raised the issue with the French member of the Tripartite Commission - a Commission consisting of France, Belgium and Luxembourg - on polluted waters. The Parliament, however, seemed to consider that action insufficient and was anxious that the Belgian Government should raise the issue directly with the French Government.

306. States have also considered monitoring of the activity by joint bodies. For example, with respect to the Rose Canal dispute between Mexico and the United States, the United States sought recommendations of the International Water and Boundary Commission, a joint commission between the two countries. The function of the Water Commission was to continue its studies on problems caused by the Rose Canal with the intention of bringing them to a conclusion and of submitting a joint report as early as possible. The report was to include recommendations not only concerning remedial measures but also with respect to an equitable division of costs between the two Governments. 34/

32/ Belgium Parliamentary Records, Recueil de points de vue belges (29 May 1973), p. 17.

33/ Ibid., 4 July 1973, p. 8.

34/ Whiteman, op. cit., vol. 6, p. 264.

B. Provisions for prevention of harm

307. Recommendations for preventing injuries may require a specific or a more general change in the process of performance of activities. In order to minimize the risk of harm arising from an activity, changes may be made in the manner in which the activity is conducted. There may be an alteration in the actual structure or operation of the ongoing activity, a partial or occasional halting, a complete halt of an activity or an emergency back-up plan in case of unexpected occurrences. There appears to be a relation between the content of change and the magnitude of perceived harm from the activity.

Multilateral agreements

308. Article 4 of the Convention concerning Lake Constance enumerates the extent of recommendations which the Commission shall make in order to prevent pollution of the lake and protect the interests of individual coastal States. Paragraphs (c), (d), (e) and (f) of that article provide:

> "c) discuss measures for remedying existing pollution and preventing all future pollution of Lake Constance and recommend them to the riparian States;
>
> "d) discuss measures which any riparian State proposes to take in accordance with Article 1, paragraph 3, above;
>
> "e) study the possibility of instituting regulations to preserve Lake Constance from pollution; consider the possible content of such regulations which shall, if appropriate, form the subject of another convention between the riparian States;
>
> "f) concern itself with all other questions relating to control of pollution of Lake Constance."

309. Recommended changes may be relevant to the structure and operation of the activities. Paragraph (c) of article XI of the Kuwait Regional Convention on the Protection and Development of the Marine Environment and the Coastal Area provides for this type of recommendation:

> "(c) The Contracting States undertake to develop, individually or jointly, technical and other guidelines in accordance with standard scientific practice to assist the planning of their development projects in such a way as to minimize their harmful impact on the marine environment. In this regard international standards may be used where appropriate."

310. The Convention on the Northwest Atlantic Fisheries also empowers its Commission to recommend, if necessary, a catch limit and a size limit for any species or prohibit the use of certain appliances. Paragraphs (c), (d) and (e) of article VIII provide:

> "(c) establishing size limits for any species;

"(d) prescribing the fishing gear and appliances the use of which is prohibited;

"(e) prescribing an over-all catch limit for any species of fish."

311. In addition to changes in the structure and operation of activities, partial or occasional cessation of activities may also be recommended. For example, paragraphs (a) and (b) of the same article VIII of the above Convention provide that the Commission may establish open or closed seasons for catching fish or close to fishing such portions of the area populated by small or immature fish:

"(a) establishing open and closed seasons;

"(b) closing to fishing such portions of a sub-area as the Panel concerned finds to be a spawning area or to be populated by small or immature fish;"

312. When injury is caused, the injured State may request the assistance of the acting State to take certain measures in the territory of the former to minimize the injury. For example, article XXI of the Convention on International Liability for Damage Caused by Space Objects obligates the acting State - the launching State - to provide rapid assistance to the injured State when the latter requests it:

"Article XXI

"If the damage caused by a space object presents a large-scale danger to human life or seriously interferes with the living conditions of the population or the functioning of vital centres, the States Parties, and in particular the launching State, shall examine the possibility of rendering appropriate and rapid assistance to the State which has suffered the damage, when it so requests. However, nothing in this article shall affect the rights or obligations of the States Parties under this Convention."

313. Article 199 of the Convention on the Law of the Sea provides for contingency plans to be designed by States as well as international organizations to combat pollution:

"Article 199

"Contingency plans against pollution

"In the cases referred to in article 198, States in the area affected, in accordance with their capabilities, and the competent international organizations shall co-operate, to the extent possible, in eliminating the effects of pollution and preventing or minimizing the damage. To this end, States shall jointly develop and promote contingency plans for responding to pollution incidents in the marine environment."

314. The recommended changes may be compulsory. Article 6 of the Convention relating to Lake Constance, in connection with the recommendations of the

Commission, obligates the riparian States to do their utmost to ensure that those recommendations are put into effect within the limits of their domestic legislation. However, the riparian State who is expected to implement the Commission's recommendation may recognize them as binding. Hence, it appears that the compulsory nature of the recommendation depends entirely on the willingness of the acting State. Article 6 of the Convention provides:

"Article 6

"1. The riparian States undertake to give careful consideration to water protection measures recommended by the Commission which affect their territory and shall do their utmost to ensure that such measures are put into effect within the limits of their domestic legislation.

"2. Riparian States in whose territory water protection measures on which the Commission makes recommendations have to be put into effect may recognize a recommendation of the Commission as being binding on them and instruct their delegation to make a statement to that effect."

315. Article VIII of the International Convention for the Conservation of Atlantic Tunas provides an elaborate procedure for the acceptance of the decisions of the Commission. Accordingly, if a recommendation of the Commission faces opposition by less than the majority of the contracting parties, that recommendation shall become effective for only the Contracting Parties that have not presented an objection thereto. 35/

35/ Article VIII reads:

"CONSERVATION OF ATLANTIC TUNAS

"Article VIII

"1. (a) The Commission may, on the basis of scientific evidence make recommendations designed to maintain the populations of tuna and tuna-like fishes that may be taken in the Convention area at levels which will permit the maxiumum sustainable catch. These recommendations shall be applicable to the Contracting Parties under the conditions laid down in paragraphs 2 and 3 of this Article.

"(b) The recommendations referred to above shall be made:

"(i) at the initiative of the Commission if an appropriate Panel has not been established or with the approval of at least two-thirds of all the Contracting Parties if an appropriate Panel has been established;

"(ii) on the proposal of an appropriate Panel if such a Panel has been established;

(continued)

"(iii) on the proposal of the appropriate Panels if the recommendation in question relates to more than one geographic area, species or group of species.

"2. Each recommendation made under paragraph 1 of this Article shall become effective for all Contracting Parties six months after the date of the notification from the Commission transmitting the recommendation to the Contracting Parties, except as provided in paragraph 3 of this Article.

"3. (a) If any Contracting Party in the case of a recommendation made under paragraph 1 (b) (i) above, or any Contracting Party member of a Panel concerned in the case of a recommendation made under paragraph 1 (b) (ii) or (iii) above, presents to the Commission an objection to such recommendation within the six months period provided for in paragraph 2 above, the recommendation shall not become effective for an additional sixty days.

"(b) Thereupon any other Contracting Party may present an objection prior to the expiration of the additional sixty days period, or within forty-five days of the date of the notification of an objection made by another Contracting Party within such additional sixty days, whichever date shall be the later.

"(c) The recommendation shall become effective at the end of the extended period or periods for objection, except for those Contracting Parties that have presented an objection.

"(d) However, if a recommendation has met with an objection presented by only one or less than one-fourth of the Contracting Parties, in accordance with sub-paragraphs (a) and (b) above, the Commission shall immediately notify the Contracting Party or Parties having presented such objection that it is to be considered as having no effect.

"(e) In the case referred to in sub-paragraph (d) above the Contracting Party or Parties concerned shall have an additional period of sixty days from the date of said notification in which to reaffirm their objection. On the expiry of this period the recommendation shall become effective, except with respect to any Contracting Party having presented an objection and reaffirmed it within the delay provide for.

"(f) If a recommendation has met with objection from more than one-fourth but less than the majority of the Contracting Parties, in accordance with sub-paragraphs (a) and (b) above, the recommendation shall become effective for the Contracting Parties that have not presented an objection thereto.

316. The International Convention relating to Intervention on the High Seas in Cases of Oil Pollution Casualties provides, in paragraph (e) of article III, for measures to be considered by the coastal State to minimize damage which may result from its action. It requires that the coastal State, before taking any action or during its course, "use its best endeavours ... to afford persons in distress any assistance of which they may stand in need, and in appropriate cases to facilitate the repatriation of ships' crews, and to raise no obstacle thereto".

Bilateral agreements

317. Some bilateral agreements provide that the acting State should notify the potential injured State of the danger which is caused as a result of activities in the territory of the former. For example, article 6 36/ of the Convention on Hydrological Resources between the Republic of Argentina and the Republic of Chile; paragraphs (2) and (3) of article 24 37/ of the Treaty between the Czechoslovak

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(continued)

"(g) If objections have been presented by a majority of the Contracting Parties the recommendation shall not become effective.

"4. Any Contracting Party objecting to a recommendation may at any time withdraw that objection, and the recommendation shall become effective with respect to such Contracting Party immediately if the recommendation is already in effect, or at such time as it may become effective under the terms of this Article.

"5. The Commission shall notify each Contracting Party immediately upon receipt of each objection and of each withdrawal of an objection, and of the entry into force of any recommendation."

36/ Article 6 provides:

"6. La Parte requerida deberá comunicar, dentro de un plazo razonable que en todo caso no excederá de cinco meses, si hay aspectos del proyecto o del programa de operaciones que puedan causarle perjuicio sensible. En tal caso, indicará las razones técnicas y cálculos en que se funde y las sugerencias de modificación del proyecto o del programa de operaciones notificados, destinadas a evitar aquel perjuicio."

37/ Paragraphs (2) and (3) of article 24 provide:

"(2) If a forest fire breaks out near the frontier line, the competent authorities of the Party on whose territory the fire breaks out shall, as far as possible, do everything in their power to extinguish it and to prevent it from spreading across the State frontier.

"(3) If there is danger of a forest fire spreading across the State frontier, the Party on whose territory the danger originated shall immediately warn the other Party, so that action may be taken to prevent the fire from spreading across the State frontier."

Republic and the Hungarian People's Republic concerning the Régime of State Frontiers; articles 19 and 27 38/ of the Agreement between the Government of the Polish Republic and the Government of the Union of Soviet Socialist Republics concerning the Régime on the Soviet-Polish State Frontier provide for such requirements.

318. Similarly, the Convention between Belgium and France on Radiological Protection with regard to the Installations of the Ardennes Nuclear Power Station

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38/ Articles 19 and 27 provide:

"Article 19

"1. The competent authorities of the Contracting Parties shall exchange information concerning the level and volume of water and ice conditions on frontier waters, if such information may help to avert the dangers created by floods or floating ice. If necessary, the said authorities shall also agree upon a regular system of signals in times of flood or floating ice. Delays in communicating or failure to communicate such information may not constitute grounds for claiming compensation in respect of damage caused by flood or floating ice.

"Article 27

"1. In sectors adjacent to the frontier line the Contracting Parties will exploit their forests in such a way as not to damage the forests of the other Party.

"2. If a forest fire breaks out near the frontier, the Contracting Party on whose territory the fire breaks out must, as far as possible do everything in its power to localize and extinguish the fire and to prevent it from spreading across the frontier.

"3. Should a forest fire threaten to spread across the frontier, the Contracting Party on whose territory the danger originated shall immediately warn the other Contracting Party so that appropriate action may be taken to localize the fire on the frontier.

"4. If trees fall beyond the frontier line as the result of elemental causes or logging operations, the competent authorities of the Contracting Parties shall take all steps to enable the persons concerned of the neighbouring Party to cut up and remove the trees to their own territory. The competent authorities of the Contracting Party to which the trees belong must inform the competent authorities of the other Party of such occurrences.

provides for mutual assistance in case of accident. The means of assistance, under the agreement, will be put under a single authority. Article 4 of the agreement provides:

> "In case of accident, the Contracting Parties, being desirous of assisting each other to the greatest possible extent, shall place the means of assistance that they furnish under a single authority, which shall be responsible for the general administration of the aid and emergency action.
>
> "The provisions relating to this mutual assistance are set out in annex III."

319. Norway and Finland, in an agreement 39/ relating to the transfer of the course of water from their frontier rivers, agreed on certain measures which each have to take individually in order to offset any inconvenience that activity might have on the inhabitants along the banks of the river. Those measures are stipulated in article 2:

> "Article 2. To offset any inconvenience which the transfer of water referred to in article 1 could cause the inhabitants along the banks of the Näätämo river, the Governments shall take the following measures:
>
> "(a) The Government of Norway shall take steps to facilitate the movement of salmon upstream past Koltaakoski on the Näätämo river so that the fish can gain access to the upper reaches of the river.
>
> "The plans for the installation shall be laid before fishery experts designated by the Government of Finland, for their opinion.

(continued)

> "In such cases the transportation of the trees across the frontier shall be exempt from all duties or taxes."

39/ Agreement between the Governments of Finland and Norway on the transfer from the course of Näätämo (Neiden) River to the course of the Gandvik River of water from the Garsjöen, Kjerringvatn and Forstevannene Lakes (25 April 1951).

"The work shall be carried out at the expense of the Government of Norway as soon as possible after the entry into force of this Agreement.

"(b) The Government of Finland shall arrange for the removal of a number of large boulders and holms lying in the stretch of about four kilometres along the Näätämo river between the confluence of the Kallo and Näätämo rivers and the frontier between Finland and Norway and obstructing timber-floating."

320. Similarly, a recommendation for mutual assistance in case of crisis was incorporated in articles 20 and 21 of an agreement between Poland and the German Democratic Republic in 1952. 40/ In an exchange of notes, Canada and the United States have agreed to establish joint pollution contingency plans for waters of mutual interest. 41/ The Treaty between Canada and the United States regarding the Columbia River basin 42/ requires each party to exercise due diligence to remove

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40/ Agreement between the Government of the Polish Republic and the Government of the German Democratic Republic concerning navigation in frontier waters and the use and maintenance of frontier waters (6 February 1952). Articles 20 and 21 of this treaty provide:

"Article 20

"In the event of damage or accident during blasting operations, each Party undertakes to come to the other's assistance subject to reimbursement of the expenses entailed in the provision of such assistance.

"Article 21

"...

"If a dike bursts, the two Parties shall immediately combine their efforts to repair the damage, furnishing technical facilities and the necessary labour.

"The Party which asks for assistance shall bear the cost involved."

41/ Exchange of notes between the Government of Canada and the Government of the United States of America concerning a joint marine pollution contingency plan (19 June 1974).

42/ Treaty between Canada and the United States of America relating to Co-operative Development of Water Resources of the Columbia River Basin (17 January 1961).

the cause of and to mitigate the effect of any injury to each other's territory. 43/ Joint inspection by both parties of the hydraulic system on their joint waters was recommended in article 7 of chapter 1 of the General Convention concerning the Hydraulic System Concluded between the Kingdom of Romania and the Kingdom of Yugoslavia. 44/ Accordingly, subject to the previous consent of both States, on the proposal of either State, a joint inspection of areas affected by hydraulic system may take place in order to recommend measures to improve the hydraulic system affecting either or both States. Recommendations for the prevention or minimization of harm to neighbouring States have also been made in the form of banning certain activities at certain places. For example, in an agreement in 1948, 45/ Finland and the Soviet Union agreed, in order to safeguard their joint frontier line, to establish a belt 20 metres wide within and around their border, where exploitation of mineral deposits was ordinarily to be prohibited and permitted only in exceptional cases and by agreement between the two States. 46/

43/ Ibid. Paragraph 3 of article XVIII provides:

"3. Canada and the United States of America, each to the extent possible within its territory, shall exercise due diligence to remove the cause of and to mitigate the effect of any injury, damage or loss occurring in the territory of the other as a result of any act, failure to act, omission or delay under the Treaty."

44/ Concluded on 14 December 1931. Article 7, chapter I, provides:

"On the proposal of either State, and subject to previous consent, joint inspections of the places affected may be made from time to time for the purpose of studying the hydraulic system of the hydrotechnical areas and watercourse and their basins, in order to consider what measures are advisable or what works should be carried out for the maintenance or improvement of the hydraulic system affecting either or both of the States."

45/ Agreement between the Government of the Union of Soviet Socialist Republics and the Government of the Republic of Finland concerning the Régime of the Soviet-Finnish Frontier (9 December 1948).

46/ Ibid. Article 18 of this treaty provides:

"1. Mining and the prospecting of mineral deposits in the immediate vicinity of the frontier shall be governed by the regulations of the Party in whose territory the workings are situated.

"2. In order to safeguard the frontier line there shall on each side thereof be a belt twenty metres wide within which the work referred to in paragraph 1 of this article shall ordinarily be prohibited and shall be permitted only in exceptional cases by agreement between the competent authorities of the Contracting Parties."

Judicial decisions and State practice other than agreements

321. At times, it has been essential or desirable to avert the risk of injury instead of waiting until it has materialized. This step may be the first measure in preventing injury. Judicial decisions and official correspondence demonstrate that, through different methods of deterrence, efforts by States and non-State entities have been made to postpone an activity or re-evaluate it. For example, in 1961, the United States decided to release 20 kilograms of tiny copper "hairs" or "needles" in outer space to form a belt around the earth about 15 kilometres wide and 30 kilometres deep. 47/ The purpose was to test its feasibility to reflect communications signals. The prospect of such use of the shared resource caused international as well as national concern for scientific groups about its possible adverse effects upon radio and optical astronomy. The Soviet Union also complained about the possible interference with the movement of space crafts. As a result of many protests, a special meeting of the United States President's Scientific Advisory Council (PSAC) was called to review the project and advise whether the launching should be stopped, but PSAC found that it should be a safe undertaking. The West Ford Test consequently went ahead a month later.

322. Injunctions have also been used as a procedure to postpone an activity with harmful consequences, until a final decision on merits is taken. This is a fairly routine occurrence in United States environmental problems. For example, in relation to the construction of the trans-Alaska pipeline, an action by three United States conservation groups with intervention by their Canadian counterparts was brought to the D.C. District Court of Washington, D.C. 48/ The Court issued a preliminary injunction. After further hearings, however, the Court dissolved its preliminary injunction, denied a permanent injunction and dismissed the complaints. 49/

323. International tribunals have also granted the equivalent of injunctions in some cases regarding acts with extraterritorial harmful consequences. At an early stage of the Fisheries Jurisdiction cases, the International Court of Justice (ICJ) issued orders concerning interim measures of protection which, among other things, provided that the parties should "ensure that no action of any kind is taken which might aggravate or extend the dispute submitted to the Court" and also "ensure that no action is taken which might prejudice the rights of the other Party in respect

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47/ The New York Times, 30 July 1961, p. 48, col. 1; ibid., 3 February 1962, p. 5, col. 1; ibid., 10 May 1962, p. 16, col. 4; ibid., 13 May 1963, p. 1, col. 5; ibid., 21 May 1963, p. 3, col. 1; ibid., 23 September 1963, p. 28, col. 2.

48/ Wilderness Society v. Hickel, 325 Federal Supplement (District Court of Washington, D.C., 1970), pp. 422 and 424. See also Natural Resources Defense Council v. Morton, 458 F. 2d 827 (D.C. Cir. 1972).

49/ Wilderness Society v. Morton, 458 F. 2d 842 (D.C. Cir. 1973).

of the carrying out of whatever decision on the merits the Court may render". 50/ The 1972 orders also held that the Republic of Iceland should refrain from taking any measures to enforce its purported new fisheries regulations against ships registered in the United Kingdom or the Federal Republic of Germany outside the agreed 12-mile fisheries zone and that Iceland should further refrain from applying any administrative, judicial or other measures against such ships, their crews, or other related persons because of their having engaged in fishing activities between 12 and 50 miles offshore. 51/ For their part, the United Kingdom and Germany were directed not to take more than 170,000 and 119,000 metric tons of fish respectively from the "sea area of Iceland". 51/ Iceland, however, ignored the order.

324. Preliminary injunction was also granted by ICJ in the Nuclear Tests cases. By issuing orders concerning interim measures of protection, the Court instructed France to "avoid nuclear tests causing the deposit of radioactive fall-out" over Australia and New Zealand, pending final decisions in its proceedings. 52/

325. State practice shows a reluctance to completely halt activities in the legitimate interest of the acting State. However, the results of management and monitoring indicate in certain instances that a change has been made in the operation of the activity to take into account the interests of other States.

326. As a result of correspondence concerning the Peyton Packing Co. and Casuco Co. (United States companies), the companies took considerable measures to control odors reaching the border cities in Mexico emanating from meat packing plants, including a phase out of certain activities, changing working hours to take the most advantage of meteorological conditions and systems of disinfection:

> "3. Reduced the number of cattle so that there are no more than 6,500 head in the pens at any time.
>
> "4. Constructed a system of spray heads on the fences of all four sides of the property for very high pressure dispensing of a masking agent to alleviate any remaining odor emanating from the premises.
>
> "5. Began plans which in approximately twelve months will remove all cattle feeding operations from the present area.

50/ Fisheries Jurisdiction, (United Kingdom v. Iceland) (Federal Republic of Germany v. Iceland), Interim Protection Orders (17 August 1972), I.C.J. Reports 1972, pp. 17, 30 and 35.

51/ Interim Protection Orders, I.C.J. Reports 1972, pp. 17 and 35.

52/ Nuclear Tests (Australia v. France) (New Zealand v. France), Interim Protection Orders (22 June 1973), I.C.J. Reports 1973, pp. 106, 135 and 142. Less than a month after the order, France exploded another device over its Pacific atoll of Mururoa.

"The Casuco Company:

"1. Eliminated the rendering of partially decomposed carcasses.

"2. Changed operations from night hours to day hours to take the most advantage of meteorological conditions.

"3. Built an oxidizing furnace fired by natural gas to oxidize any odors from the plant operation.

"4. Constructed a condenser to condense all possible vapors, which are disposed of with the liquid waste.

"5. Installed a system of sprays to counteract any remaining odor that might otherwise escape into the atmosphere.

"With respect to industrial waste, the Peyton Packing Company constructed a primary treatment plant. It removes from the waste going into the Rio Grande all the blood and much of the solid organic matter. While this is not complete treatment, when the public sewers become available to the company, the effluent will be disposed of by that method." 53/

327. Similarly, the company operating the Trail Smelter undertook to contain and reduce fumes emanating from the plant and causing damage to the state of Washington by treating the sulfur dioxide emitted:

"The Consolidated Mining and Smelting Company of Canada, Limited, proceeded after 1930 to make certain changes and additions in its plant, with the intention and purpose of lessening the sulphur contents of the fumes, and in an attempt to lessen injurious fumigations, a new system of control over the emission of fumes during the crop growing season came into operation about 1934. To the three sulphuric acid plants in operation since 1932, two others have recently been added. The total capacity is now of 600 tons of sulphuric acid per day, permitting, if these units could run continually at capacity, the fixing of approximately 200 tons of sulphur per day. In addition, from 1936, units for the production of elemental sulphur have been put into operation. There are at present three such units with a total capacity of 140 tons of sulphur per day. The capacity of absorption of sulphur dioxide is now 600 tons of sulphur dioxide per day (300 tons from the zinc plant gases and 300 tons from the lead plant gases). As a result, the maximum possible recovery of sulphur dioxide, with all units in full operation has been brought to a figure which is about equal to the amount of that gas produced by smelting operations at the plant in 1939. However, the normal shutdown of operating units for repairs, the power supply, ammonia available and the

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53/ Whiteman, op. cit., vol. 6, pp. 258-259.

general market situation are factors which influence the amount of sulphur dioxide treated." 54/

328. These measures greatly lessened the amount of sulphur dioxide dispersed into the air:

> "In 1939, 360 tons, and in 1940, 416 tons, of sulphur per day were oxidized to sulphur dioxide in the metallurgical processes at the plant. Of the above, for 1939, 253 tons, and for 1940, 289 tons per day, of the sulphur which was oxidized to sulphur dioxide was utilized. One hundred and seven tons and 127 tons of sulphur per day for those two years, respectively, were emitted as sulphur dioxide to the atmosphere.
>
> "The tons of sulphur emitted into the air from the Trail Smelter fell from 10,000 tons per month in 1930 to about 7,200 tons in 1931 and 3,400 tons in 1932 as a result both of sulphur dioxide beginning to be absorbed and of depressed business conditions. As depression receded, this monthly average rose in 1933 to 4,000 tons, in 1934 to nearly 6,300 tons and in 1935 to 6,800 tons. In 1936, however, it had fallen to 5,600 tons; in 1937, it further fell to 4,850 tons; in 1938, still further to 4,230 tons to reach 3,250 tons in 1939. It rose, again, however, to 3,875 tons in 1940." 55/

329. In cases of dispute over the distribution and delimitation of resources, changes in content include designing a régime for more equitable distribution of the resource between interested States. For example, in the Fisheries Jurisdiction, the parties were required to mutually negotiate, in good faith, an equitable distribution of their fishing rights off the coast of Iceland.

330. Change may entail an expansion of the designated danger area and require notice of immenent danger to States or to other international actors. Thus, in the Eniwetok Atoll nuclear tests series, after monitoring of the activity showed harm that may occur to others outside the calculated danger zone, the danger area was expanded. 56/ In addition, a more general Notice to Mariners was issued. 57/

331. Once it becomes evident that there is no possibility of any or further injuries from a particular activity, the preventive measures are no longer required to be maintained. This would lead to such actions as disestablishing the danger zone once the activity has been completed and it has been shown that no future harm is likely to ensue. Thus, the United States disestablished zones of danger on

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54/ United Nations, Reports of International Arbitral Awards, vol. III, p. 1946.

55/ Ibid., pp. 1946-1948.

56/ Whiteman, op. cit., vol. 4, p. 560.

57/ Ibid., p. 561.

completion of the nuclear tests and gave notice thereof. The United States Government stated that there were no injuries to personnel of the Joint Task Force Seven attributable to any effect of the tests. A post-operation radiological survey of the Eniwetok-Bikini danger area had been conducted and it was determined that the danger area could be disestablished without hazard. However, the land area of the Bikini and Eniwetok atolls, the water area of their lagoons and the adjacent areas within three miles to seaward of the atolls and the overlying airspace remained closed to vessels and aircraft which did not have specific clearance. 58/

332. In addition to restructuring the activity or requiring additional safeguards or curtailing operations, a partial or occasional halting of the activity may be mandated. In the Trail Smelter Arbitration, such a preventive measure was instituted in the event fumes emissions surpassed well-defined limits. Guidelines were established, taking into consideration agricultural activities which may be harmed by fume emissions as well as the growing or non-growing season:

"General Restrictions and Provisions

"(a) If the Columbia Gardens recorder indicates 0.3 part per million or more of sulphur dioxide for two consecutive twenty minute periods during the growing season, and the wind direction is not favorable, emission shall be reduced by four tons of sulphur per hour or shut down completely when the turbulence is bad, until the recorder shows 0.2 part per million or less of sulphur dioxide for three consecutive twenty minute periods.

If the Columbia Gardens recorder indicates 0.5 part per million or more of sulphur dioxide for three consecutive twenty minute periods during the non-growing season and the wind direction is not favorable, emission shall be reduced by four tons of sulphur per hour or shut down completely when the turbulence is bad, until the recorder shows 0.2 part per million or less of sulphur dioxide for three consecutive twenty minute periods.

"(b) In case of rain or snow, the emission of sulphur shall be reduced by two (2) tons per hour. This regulation shall be put into effect immediately when precipitation can be observed from the Smelter and shall be continued in effect for twenty (20) minutes after such precipitation has ceased.

"(c) If the slag retreatment furnace is not in operation the emission of sulphur shall be reduced by two (2) tons per hour.

"(d) If the instrumental reading shows turbulence excellent, good or fair, but visual observations made by trained observers clearly

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58/ Ibid., pp. 594-595.

indicate that there is poor diffusion, the emission of sulphur shall be reduced to the figures given in column (1) if wind is not favorable, or column (2) if wind is favorable.

"(e) When more than one of the restricting conditions provided for in (a), (b), (c), and (d) occur simultaneously, the highest reduction shall apply.

"(f) If, during the non-growing season, the instrumental reading shows turbulence fair and wind not favorable but visual observations by trained observers clearly indicate that there is excellent diffusion, the maximum permissible emission of sulphur may be increased to the figures in column (5). The general restrictions under (a), (b), (c) and (e), however, shall be applicable." 59/

333. Notice was to be issued when the emission limits were exceeded. 60/

334. Perceived injury from some activities may be so great as to cause a cry for complete halting of the activity. Such a request stems from the belief that no precautionary régime can adequately safeguard against the perceived harm. Although this survey of judicial decisions and official correspondence has not uncovered an instance where a legitimate activity was permanently banned, requests for total ban have been made in the area of nuclear activities. During the Eniwetok Atoll nuclear tests, Japan protested atmospheric nuclear tests and called for an immediate suspension of all tests:

"In view of this menace posed by nuclear tests to mankind and from a humanitarian standpoint, the Japanese Government and people have consistently had an earnest desire that all nuclear bomb tests be suspended immediately. This desire was stated in a note verbale sent by the Foreign Ministry to the United States Embassy in Japan on September 15, 1957, asking for the suspension of tests on Eniwetok, and also in Prime Minister Kishi's letter to President Eisenhower, dated September 24, 1957.

"The Japanese Government regrets that the United States Government, in spite of the desire of the Japanese Government and people, has announced the establishment of a danger zone to conduct nuclear bomb tests. The Japanese Government takes this opportunity to request again that the United States Government consider seriously the suspension of the afore-mentioned tests.

"The United States Government states that every possible precaution will be taken to prevent damage and injury to human lives and property in the danger zone and that there is no probability of any accidents outside the

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59/ United Nations, Reports of International Arbitral Awards, vol. III, pp. 1976-1977.

60/ Ibid., p. 1977.

danger zone. Whatever precaution is taken, however, the Japanese Government is greatly concerned over conducting of nuclear tests and establishment of a danger zone for that purpose in view of the fact that said zone is near to routes of the Japanese merchant marine and to fishing grounds of Japanese fishing boats." 61/

335. In a border incident between France and Switzerland in 1892, the French decided to halt the military target practice exercise near the Swiss border until steps had been taken to avoid accidental transboundary injuries. 62/

336. Emergency back-up plans may also be requested for minimizing injury in case it occurs. Emergency back-up plans were in effect during the Eniwetok Atoll nuclear tests in the event of failure of wind predictions. These plans included immediate evacuation of persons and immediate medical care. The plans were executed when the magnitude of the 1 March 1954 test explosion was underestimated by half and the error was compounded by erroneous wind predictions:

"The United States meanwhile took swift action to mitigate the effects of the test mishaps. Injured Marshallese were given immediate medical care at naval facilities on nearby Kwajalein Atoll; expert medical personnel were rushed to their assistance, and to that of the injured Japanese fishermen as soon as their plight became known; and prompt assurances were given that all financial loss would be made good. [Standing Committee on Petitions, U.N. Trusteeship Council, 87th Report 5 (Doc. No. T/L. 510) (1954); Manchester Guardian, March 24, 1954, p. 2, col. 1; N. Y. Times, March 25, 1954, p. 18, col. 7.] Two million dollars has been paid to Japan for damages resulting from the tests, including both personal injuries suffered by the crew of the Fukuryu Maru and damage to the Japanese fishing industry. [N. Y. Times, Jan. 5, 1955, p. 6, col. 1.]" 63/

337. The Lake Lanoux tribunal noted that the potential injured or affected State has the right to assert its interests and to demand modification of the acting State's activities. The acting State must take the affected State's proposals into consideration. In the tribunal's opinion, procedurally, the upstream State has a right of initiative but, nevertheless, must examine the schemes offered by the downstream State. Of course, the tribunal stated that the upstream State has the right to give preference to the solution contained in its own plan provided that it takes into consideration in a reasonable manner the interests of the downstream State. 64/

61/ Whiteman, op. cit., vol. 4, p. 585.

62/ Guggenheim, "La pratique suisse" (1956), Annuaire Suisse de Droit International (1957), p. 168.

63/ Whiteman, op. cit., vol. 4, p. 571.

64/ International Law Reports (1957), p. 140.

338. At least one international judicial decision indicates that upon failure by the acting State to fulfil its duty of care unilaterally or by reaching agreement through negotiations with the affected State, the decision process will be subject to review by an international tribunal. The Trail Smelter decision explicitly provided for recourse by the parties, in the event of failure to agree on amendment or suspension of the permanent régime, to decision-making by a joint body. The third party decision makers were to consist of reputable scientists:

"VI. Amendment or Suspension of the Régime

"If at any time after December 31, 1942, either Government shall request an amendment or suspension of the régime herein prescribed and the other Government shall decline to agree to such request, there shall be appointed by each Government, within one month after the making or receipt respectively of such request, a scientist of repute; and the two scientists so appointed shall constitute a Commission for the purpose of considering and acting upon such request. If the Commission within three months after appointment fail to agree upon a decision, they shall appoint jointly a third scientists who shall be Chairman of the Commission; and thereupon the opinion of the majority, or in the absence of any majority opinion, the opinion of the Chairman shall be decisive; the opinion shall be rendered within one month after the choice of the Chairman. If the two scientists shall fail to agree upon a third scientist within the prescribed time, upon the request of either, he shall be appointed within one month from such failure by the President of the American Chemical Society, a scientific body having a membership both in the United States, Canada, Great Britain and other countries.

"Any of the periods of time herein prescribed may be extended by agreement between the two Governments.

"The Commission of two, or three scientists as the case may be, may take such action in compliance with or in denial of the request above referred to, either in whole or in part, as it deems appropriate for the avoidance or prevention of damage occurring in the State of Washington. The decision of the Commission shall be final, and the Government shall take such action as may be necessary to ensure due conformity with the decision, in accordance with the provisions of Article XII of the Convention.

"The compensation of the scientists appointed and their reasonable expenditures shall be paid by the Government which shall have requested a decision; if both Governments shall have made a request for decision, such expenses shall be shared equally by both Government; provided, however, that if the Commission in response to the request of the United States shall find that notwithstanding compliance with the régime in force damage has occurred through fumes in the State of Washington, then the above expenses shall be paid by the Dominion of Canada." 65/

65/ United Nations, Reports of International Arbitral Awards, vol III, p. 1978.

339. The Fisheries Jurisdiction court stated that the appropriate decision makers for arranging equitable distribution of fishery resources were the parties to the dispute. The court, after enumerating factors to be considered in designing an equitable régime, concluded that for that particular case, "negotiation" was the most appropriate method for resolving the dispute. 66/ The Court noted that the decision must be based on scientific data mainly in the possession of the parties:

> "This necessitates detailed scientific knowledge of the fishing grounds. It is obvious that the relevant information and expertise would be mainly in the possession of the Parties. The Court would for this reason, meet with difficulties if it were itself to attempt to lay down a precise scheme for an equitable adjustment of the rights involved. It is thus obvious that both in regard to merits and to jurisdiction, the Court only pronounces on the case which is before it and not on any hypothetical situation which might arise in the future." 67/

340. Similarly, it was noted by the Corfu Channel court that the decision as to whether notice of a condition existing in the territorial waters of the State must be given to other States depends on information uniquely within the possession of that State. The court took note of the lack of notice and held Albania liable for failure to notify, and for the injuries resulting from it.

341. Also, the court in the North Sea Continental Shelf Case, quoting from the Free Zones of Upper Savoy and the District of Gex, stated that the judicial settlement of international disputes "is simply an alternative to the direct and friendly settlement of such disputes between the parties. 68/ The court added that that policy was mandated by the observable fact that judicial or arbitral settlement was not universally accepted.

342. Operators of activities have in the past determined which changes are necessary to prevent or minimize injuries to others. In the Peyton Packing Company and Casuco Company disputes, the operators of those plants determined and effectuated changes in meat-packing activities to alleviate injury to the State of Mexico and its citizens. The remedies included detailed changes and modifications of the plant's technical operation as well as the schedule of the operation. 69/

343. Similarly, the operator of the Trail Smelter also took steps to diminish fumes expelled from the smelter over the state of Washington. Those included additional sulphur dioxide treatment plants:

66/ I.C.J. Reports 1974, p. 31.

67/ Ibid., p. 32.

68/ I.C.J. Reports 1969, p. 47.

69/ Whiteman, op. cit., vol. 6, pp. 258-259.

"The Consolidated Mining and Smelting Company of Canada, Limited, proceeded after 1930 to make certain changes and additions in its plant, with the intention and purpose of lessening the sulphur contents of the fumes, and in an attempt to lessen injurious fumigations, a new system of control over the emission of fumes during the crop growing season came into operation about 1934. To the three sulphuric acid plants in operation since 1932, two others have recently been added. The total capacity is now of 600 tons of sulphuric acid per day, permitting, if these units could run continually at capacity, the fixing of approximately 200 tons of sulphur per day. In addition, from 1936, units for the production of elemental sulphur have been put into operation. There are at present three such units with a total capacity of 140 tons of sulphur per day. The capacity of absorption of sulphur dioxide is now 600 tons of sulphur dioxide per day (300 tons from the zinc plant gases and 300 tons from the lead plant gases). As a result, the maximum possible recovery of sulphur dioxide, with all units in full operation has been brought to a figure which is about equal to the amount of that gas produced by smalting operations at the plant in 1939. However, the normal shut-down of operating units for repairs, the power supply, ammonia available, and the general market situation are factors which influence the amount of sulphur dioxide treated." 70/

344. However, the decision by the operator of the Trail Smelter was reviewed and added to by the Arbitral Tribunal established by the United States and Canada in light of the widespread damage occurring to Washington.

70/ United Nations, Reports of International Arbitral Awards, vol, III, p. 1946.

IV. GUARANTEES FOR PAYMENT OF COMPENSATION

345. When a policy decision is made to allow the performance of certain activities, knowing that they may cause injuries, efforts are made to provide, in advance, guarantees for the payment of compensation. The guarantees are in the form of requiring the operator of certain activities to either carry insurance policies or provide financial securities. Such requirements are similar to those stipulated in the domestic laws of many States regarding the operation of complex industries, as well as more routine activities such as driving and maintaining a car.

Multilateral agreements

346. Some multilateral agreements have included provisions to secure the payment of compensation in case of harm and liability. Most multilateral agreements concerning nuclear activities are in this category. Thus, they rquire the maintenance of insurance and other financial securities for the payment of damages in case of liability. The Convention on the Liability of Operators of Nuclear Ships requires the maintenance of such securities. The terms and the amount of insurance carried by the operator of the nuclear ships are determined by the licensing State. Although the licensing State is not required to carry insurance or other financial securities, under the convention it shall "ensure" the payments of claim for compensation for nuclear damage if the operator's insurance or security proves to be inadequate. Relevant paragraphs of article III of the Convention provide:

> "2. The operator shall be required to maintain insurance, or other financial security covering his liability for nuclear damage, in such amount, of such type and in such terms as the licensing State shall specify. The licensing State shall ensure the payment of claims for compensation for nuclear damage established against the operator by providing the necessary funds up to the limit laid down in paragraph 1 of this Artcile to the extent that the yield of the insurance or the financial security is inadequate to satisfy such claims.
>
> "3. However, nothing in paragraph 2 of this Article shall require any Contracting State or any of its constituent subdivisions, such as States, Republics or Cantons, to maintain insurance or other financial security to cover their liability as operators of nuclear ships."

347. Similar requirements have been stipulated in article VII of the Vienna Convention on Civil Liability for Nuclear Damage. The operator is obligated to provide maintenance and insurance or other financial securities required by the installation State. While the installation State is not required to carry insurance or have other financial securities for the injuries which may be caused by the operation of the nuclear plant, it shall ensure the payment of compensation established against the operator by providing necessary funds if the insurance is inadequate. Article VII provides:

> "1. The operator shall be required to maintain insurance or other financial security covering his liability for nuclear damage in such amount, of such type

and in such terms as the Installation State shall specify. The Installation State shall ensure the payment of claims for compensation for nuclear damage which have been established against the operator by providing the necessary funds to the extent that the yield of insurance or other financial security is inadequate to satisfy such claims, but not in excess of the limit, if any, established pursuant to Article V.

"2. Nothing in paragraph 1 of this Article shall require a Contracting Party or any of its constituent sub-divisions, such as States or Republics, to maintain insurance or other financial security to cover their liability as operators.

"3. The funds provided by insurance, by other financial security or by the Installation State pursuant to paragraph 1 of this Article shall be exclusively available for compensation due under this Convention.

"4. No insurer or other financial guarantor shall suspend or cancel the insurance or other financial security provided pursuant to paragraph 1 of this Article without giving notice in writing of at least two months to the competent public authority or, in so far as such insurance or other financial security relates to the carriage of nuclear material, during the period of the carriage in question."

348. Likewise, article 10 of the Convention on Third Party Liability for Nuclear Energy obligates the operator of nuclear plants to maintain insurance or other security guarantees as required by the Convention. That article provides:

"(a) To cover the liability under this Convention, the operator shall be required to have and maintain insurance or other financial security of the amount established pursuant to Article 7 and of such type and terms as the competent public authority shall specify.

"(b) No insurer or other financial guarantor shall suspend or cancel the insurance or other financial security provided for in paragraph (a) of this article without giving notice in writing of at least two months to the competent public authority or insofar as such insurance or other financial security relates to the carriage of nuclear substances, during the period of the carriage in question.

"(c) The sums provided as insurance, reinsurance, or other financial security may be drawn upon only for compensation for damage caused by a nuclear incident."

349. In addition to conventions dealing with nuclear materials, those regulating other activities have also required guarantees for payment of compensation in case of injury. Under article 15 of the Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface, the operators of aircrafts registered in another contracting State are required to maintain insurance or other security guarantees for possible damage they may cause on the surface. Under paragraph 3 (c) of article 15, a contracting State may accept, instead of insurance, the guarantees of

the other contracting State where the aircraft is registered for the payment of compensation, if the former has agreed to waive immunity from suit in respect of that guarantee. Article 15 of the Convention provides:

"Security for operator's liability

"Article 15

"1. Any Contracting State may require that the operator of an aircraft registered in another Contracting State shall be insured in respect of his liability for damage sustained in its territory for which a right to compensation exists under Article 1 by means of insurance up to the limits applicable according to the provisions of Article 11.

"2. (a) The insurance shall be accepted as satisfactory if it conforms to the provisions of this Convention and has been effected by an insurer authorised to effect such insurance under the laws of the State where the aircraft is registered or of the State where the insurer has his residence or principal place of business, and whose financial responsibility has been verified by either of those States.

"(b) If insurance has been required by any State under paragraph 1 of this Article, and a final judgement in that State is not satisfied by payment in the currency of that State, any Contracting State may refuse to accept the insurer as financially responsible until such payment, if demanded, has been made.

"3. Notwithstanding the last preceding paragraph the State overflown may refuse to accept as satisfactory insurance effected by an insurer who is not authorised for that purpose in a Contracting State.

"4. Instead of insurance, any of the following securities shall be deemed satisfactory if the security conforms to Article 17:

"(a) a cash deposit in a depository maintained by the Contracting State where the aircraft is registered or with a bank authorised to act as a depository by that State;

"(b) a guarantee given by a bank authorised to do so by the Contracting State where the aircraft is registered, and whose financial responsibility has been verified by that State;

"(c) a guarantee given by the Contracting State where the aircraft is registered, if that State undertakes that it will not claim immunity from suit in respect of that guarantee.

"5. Subject to paragraph 6 of this Article, the State overflown may also require that the aircraft shall carry a certificate issued by the insurer certifying that insurance has been effected in accordance with the provisions of this Convention, and specifying the person or persons whose liability is

secured thereby, together with a certificate or endorsement issued by the appropriate authority in the State where the aircraft is registered or in the State where the insurer has his residence or principal place of business certifying the financial responsibility of the insurer. If other security is furnished in accordance with the provisions of paragraph 4 of this Article, a certificate to that effect shall be issued by the appropriate authority in the State where the aircraft is registered.

"6. The certificate referred to in paragraph 5 of this Article need not be carried in the aircraft if a certified copy has been filed with the appropriate authority designated by the State overflown or, if the International Civil Aviation Organization agrees, with that Organization, which shall furnish a copy of the certificate to each contracting State.

"7. (a) Where the State overflown has reasonable grounds for doubting the financial responsibility of the insurer, or of the bank which issues a guarantee under paragraph 4 of this Article, that State may request additional evidence of financial responsibility, and if any question arises as to the adequacy of that evidence the dispute affecting the States concerned shall, at the request of one of those States, be submitted to an arbitral tribunal which shall be either the Council of the International Civil Aviation Organization or a person or body mutually agreed by the parties.

"(b) Until this tribunal has given its decision the insurance or guarantee shall be considered provisionally valid by the State overflown.

"8. Any requirements imposed in accordance with this Article shall be notified to the Secretary General of the International Civil Aviation Organization who shall inform each Contracting State thereof.

"9. For the purpose of this Article, the term "insurer" includes a group of insurers and for the purpose of paragraph 5 of this Article, the phrase "appropriate authority in a State" includes the appropriate authority in the highest political subdivision thereof which regulates the conduct of business by the insurer."

350. Similarly, draft articles 11 and 11A of the Draft Articles for a Convention on Liability and Compensation in Connection with the Carriage of Noxious and Hazardous Substances by Sea provide for compulsory insurance of the shipowner and the shipper:

"Article 11

"Compulsory insurance of the shipowner

"1. The owner of a ship registered in a Contracting State shall be required to maintain insurance or other financial security, such as the guarantee of a bank or a certificate delivered by an international compensation fund, in the sums fixed by applying the limits of liability prescribed in Article 6 to cover his liability for damage under the present Convention. The same shall apply to a ship not registered in a Contracting State entering or leaving a port or other place for the loading or discharge of cargo [within the territory] [in an area under the jurisdiction] of a Contracting State.

"2. A certificate attesting that insurance or other financial security is in force in accordance with the provisions of the present Convention shall be issued by the appropriate authority to each ship after determining that the requirements of paragraph 1 have been complied with. With respect to ships registered in a Contracting State, the certificate shall be issued or certified by the appropriate authority of the State of the ship's registration and, with respect to ships not registered in a Contracting State, the certificate shall be issued or certified by the appropriate authority of [any Contracting State] [the Contracting State referred to in the second sentence of paragraph 1] [such other Contracting State as a Contracting State may authorize]. This certificate shall be in the form of the annexed model and shall contain the following particulars:

"(a) name of the ship and port of registration;

"(b) name and principal place of business of the owner;

"(c) type of security;

"(d) name and principal place of business of insurer or other person giving security and, where appropriate, place of business where the insurance or security is established; and

"(e) period of validity of certificate which shall not be longer than the period of validity of the insurance or other security.

"3. The certificate shall be carried on board the ship and a copy shall be deposited with the appropriate authorities of the State of the ship's registry.

"4. Insurance or other financial security shall not satisfy the requirements of this Article if it can cease, for reasons other than the expiry of the period of validity of the insurance or security specified in the certificate under paragraph 2, before three months have elapsed from the date on which notice of its termination is given to the authorities referred to in paragraph 3, unless the certificate has been surrendered to these authorities or a new certificate has been issued within the said period. The foregoing provisions shall similarly apply to any modification which results in the insurance or security no longer satisfying the requirements of this Article.

"5. The State where the certificate is issued or certified shall, subject to the provisions of this Article and of Article 11B, determine the conditions of issue and validity of the certificate.

"[6. Any sums provided by insurance or by other financial security maintained in accordance with paragraph 1 shall be available only for the satisfaction of claims under the present Convention.]"

"Article 11A

"Compulsory insurance of the shipper

"1. The shipper of a consignment of hazardous substances shall be reqired to maintain insurance or other financial security, such as a bank guarantee in the sum laid down in Article 8, paragraph 1, to cover his liability for damage under this Convention.

"2. A certificate attesting that insurance or other financial security is in force in accordance with the provisions of this Convention shall be issued by the insurer or other person providing financial security for the shipper's liability with respect to each consignment. This certificate shall be delivered by the shipper to the owner when the consignment is handed over for carriage by sea.

"3. This certificate shall be in the form of the annexed model and shall contain the following particulars:

"(a) the name of the ship or the ships on board of which the consignment is expected to be carried and their port of registration;

"(b) the name and principal place of business of the insured person;

"(c) any particulars necessary for identification of the consignment; these particulars shall also contain a description of the substances which is in accordance with the requirements of any internationally generally accepted standards relating to sea carriage of dangerous substances;

"(d) the type of security referred to in paragraph 1;

"(e) the name and principal place of business of the insurer or other person giving security [and, where appropriate, the place where the insurance or security is established]; and

"(f) the period of validity of the insurance or other security.

"4. The insurance or other financial security shall be effected with an insurer or other person providing security approved for this purpose by any Contracting State.

"5. The insurance or security shall cover the entire period of the shipper's liability an shall cover the liability under the present Convention of the person named in the certificate as shipper or, if that person should not be the shipper as defined, of such person as does incur liability as shipper under the present Convention.

"6. Any sums provided by insurance or by other financial security maintained in accordance with paragraph 1 shall be available only for the satisfaction of claims under this Convention."

351. The International Convention on Civil Liability for Oil Pollution Damage requires that the owner of a ship registered in a contracting State which carries more than 2,000 tons of oil as cargo maintain insurance or other guarantees. Paragraph 1 of article VII provides:

> "1. The owner of a ship registered in a Contracting State and carrying more than 2,000 tons of oil in bulk as cargo shall be required to maintain insurance or other financial security, such as the guarantee of a bank or a certificate delivered by an international compensation fund, in the sums fixed by applying the limits of liability prescribed in Article V, paragraph 1 to cover his liability for pollution damage under this Convention."

352. Also, under article 8 (1) of the Convention on Civil Liability for Oil Pollution Damage Resulting from Exploration for and Exploitation of Seabed Mineral Resources, the operator of an installation is required to have and maintain insurance or other financial security to the amount and on the terms required by the controlling State.

353. Article 235 of the Convention on the Law of the Sea also provides, in paragraph 3, that States shall co-operate in developing procedures for payment of adequate compensation, such as "compulsory insurance or compensation funds".

Bilateral agreements

354. Concern for providing some advance assurances of capability to pay compensation in case of possible injury has also been expressed in some bilateral agreements. At least two bilateral agreements examined in the present study require such assurances. In the 1973 Agreement between the United Kingdom and Norway regarding the transmission of petroleum by pipeline from Ekofisk to the United Kingdom 1/ there is a requirement of insurance or furnishing security or guarantees by the licensees in respect of possible damage. Article 11 of the Agreement requires such assurances; it provides:

> "Liability for pollution damage including the costs of preventive and remedial action, shall be governed in accordance with the provisions of Article 4. The licence or licences may contain conditions concerning the liability of the licensees and their obligations to insure against or to furnish security or guarantees in respect of possible pollution damage." [Emphasis added.]

355. A similar provision exists in an agreement between the Federal Republic of Germany and Norway for the transmission of petroleum by pipeline from the Ekofisk Field to the Federal Republic of Germany. 2/ The language in this agreement appears, however, to be more obligatory. Article 12 of the Agreement provides:

> "Liability for pollution damage, including the costs of prevention and remedial action, shall be governed in accordance with the provisions of Article 4. Licenses shall contain provisions concerning the liability of the licensees and their obligations to insure against or to furnish security or guarantees in respect of possible pollution damage." [Emphasis added.]

356. Notice that in the above two agreements the operators in charge of constructing and maintaining pipelines appear to be private entities.

Judicial decisions and State practice other than agreements

357. In a few cases, a State engaged in activities with risks of damage to other States has unilaterally guaranteed the reparation of possible damage. The United States Public Law 93-513 and the Executive Order 11918 guarantee reparation of damage from certain nuclear incidents. On 6 December 1974, in a joint resolution of Congress, the United States assured compensation for damage which may be caused by nuclear incidents involving the nuclear reactor of a United States warship:

1/ Agreement between the Government of the United Kingdom of Great Britain and the Government of the Kingdom of Norway relating to the Transmission of Petroleum by Pipeline from the Ekofisk Field and Neighbouring Areas to the United Kingdom (22 May 1973).

2/ Agreement between the Federal Republic of Germany and the Kingdom of Norway relating to the Transmission of Petroleum by Pipeline from the Ekofisk Field and Neighbouring Areas to the Federal Republic of Germany (16 January 1974).

"WHEREAS it is vital to the national security to facilitate the ready acceptability of United States nuclear powered warships into friendly foreign ports and harbors; and

"WHEREAS the advent of nuclear reactors has led to various efforts throughout the world to develop an appropriate legal régime for compensating those who sustain damages in the event there should be an incident involving the operation of nuclear reactors; and

"WHEREAS the United States has been exercising leadership in developing legislative measures designed to assure prompt and equitable compensation in the event a nuclear incident should arise out of the operation of a nuclear reactor by the United States as is evidenced in particular by section 170 of the Atomic Energy Act of 1954, as amended; and

"WHEREAS some form of assurance as to the prompt availability of compensation for damage in the unlikely event of a nuclear incident involving the nuclear reactor of a United States warship would, in conjunction with the unparalleled safety record that has been achieved by United States nuclear powered warships in their operation throughout the world, further the effectiveness of such warships: Now, therefore, be it

"Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That it is the policy of the United States that it will pay claims or judgments for bodily injury, death, or damage to or loss of real or personal property proven to have resulted from a nuclear incident involving the nuclear reactor of a United States warship: Provided, That the injury, death, damage, or loss was not caused by the act of an armed force engaged in combat or as a result of civil insurrection. The President may authorize, under such terms and conditions as he may direct, the payment of such claims or judgments from any contingency funds available to the Government or may certify such claims or judgments to the Congress for appropriation of the necessary funds." 3/

358. In an exchange of notes between the United States and Spain in connection with the United States-Spain Treaty of Friendship and Co-operation, the United States made further assurances

"... that it will endeavour, should the need arise, to seek legislative authority to settle in a similar manner claims for bodily injury, death or damage to or loss of real or personal property proven to have resulted from a nuclear incident involving any other United States nuclear component giving rise to such claims within Spanish territory". 4/

3/ Public Law 93-513 (88 Stat. 1610) reprinted in Digest of United States Practice in International Law (1974), pp. 418-419.

4/ Digest of United States Practice in International Law (1976), p. 441.

In other words, the United States unilaterally expanded its liability and volunteered to enact legislation if necessary, expressing such obligation toward Spain.

359. Public Law 93-513 was later joined by an Executive Order on 1 June 1976, to provide for prompt, adequate and effective compensation in certain nuclear incidents;

> "By virtue of the authority vested in me by the joint resolution approved December 6, 1974 [Public Law 93-513.88 Stat. 1610.42 U.S.C.2211), and by section 301 of Title 3 of the United States Code, and as President of the United States of America, in order that prompt, adequate and effective compensation will be provided in the unlikely event of injury or damage resulting from a nuclear incident involving the nuclear reactor of a United States warship, it is hereby ordered as follows:
>
> "Section 1. (a) With respect to the administrative settlement of claims or judgments for bodily injury, death, or damage to or loss of real or personal property proven to have resulted from a nuclear incident involving the nuclear reactor of a United States warship, the Secretary of Defense is designated and empowered to authorize, in accord with Public Law 93-513, the payment, under such terms and conditions as he may direct, of such claims and judgments from contingency funds available to the Department of Defense.
>
> "(b) The Secretary of Defense shall, when he considers such action appropriate, certify claims or judgments described in subsection (a) and transmit to the Director of the Office of Management and Budget his recommendation with respect to appropriation by the Congress of such additional sums as may be necessary.
>
> "Sec. 2. The provisions of section 1 shall not be deemed to replace, alter, or diminish, the statutory and other functions vested in the Attorney General, or the head of any other agency, with respect to litigation against the United States and judgments and compromise settlements arising therefrom.
>
> "Sec. 3. The functions herein delegated shall be exercised in consultation with the Secretary of State in the case of any incident giving rise to a claim of a foreign country or national thereof, and, international negotiations relating to Public Law 93-513 shall be performed by or under the authority of the Secretary of State." 5/

360. Similarly, a statement made by the Department of State of the United States in relation to weather modification activities also speaks of advance agreement with potential victim States. In connection with the 1966 hearings before the United States Senate on pending legislation concerning a programme to increase usable precipitation in the United States, the State Department made the following statement:

5/ Federal Regulations, vol. 41, No. 108 (3 June 1976), p. 22329.

"The Department of State's only concern would be in case the experimental areas selected would be close to national boundaries which might create problems with the adjoining countries of Canada and Mexico. In the event of such possibilities the Department would like to insure that provision is made for advance agreement with any affected countries before experimentation took place." 6/

361. At least in one case (oil exploitation), a State (Canada) undertook to guarantee compensation for potential injuries which may be caused as a result of potential damage of oil exploitation activities in Canada by a private operator to the neighbouring State (United States). In negotiations between Canada and the United States, Canada assumed responsibility for paying compensation for any damage which may be caused to the United States by oil exploration in Canada in the Beaufort Sea, off the McKenzie River delta near the Alaskan border, by a Canadian private corporation. 7/ As a result of negotiations, the Canadian private corporation was requested to postpone the plan unless it could secure compensation for potential United States' victims. Subsequently, the Canadian Government guaranteed the payment of the sums involved, in the event that the bonding arrangement with the private corporation proved to be inadequate to pay the cost of extraterritorial damage caused by the private operator.

6/ This remark was made by the State Department in a letter to Senator Magnuson. "Weather modification", Hearings before the Senate Committee on Commerce, 89th Congress, 2nd session, part 2 (1966), p. 321.

7/ International Canada, vol. 7 (1976), pp. 84-85.

V. LIABILITY

362. Regardless of any preventive measures that States may take in undertaking activities, they may nevertheless be unable to prevent the occurrence of the injuries in the territory of another State. The concept of liability for injuries to others, in the absence of fault, does not appear to be new to domestic law. In relation to certain activities, a causal relationship between the activity and the injury is sufficient to entail liability. This concept in domestic law has been continuously promoted for reasons of morality, social policy and maintenance of public order. In countries with more complex and developed torts law, the legislators and the courts have begun to recognize that, while some activities are tolerated by law, they "must pay their way". 1/ Furthermore, there is the question of who must bear the responsibility to compensate for damage when neither party under the law could be blamed. In some instances, strict liability has been imposed upon the party that has initiated the activity as the party that can best bear the loss or for other social policies. 2/

1/ Ehrenzweig, Negligence without fault (1951).

2/ William Prosser, an authority on American torts law, enumerates instances in which strict liability has been recognized to be relevant, as follows:

> "This new policy frequently has found expression where the defendant's activity is unusual and abnormal in the community, and the danger which it threatens to others is unduly great - and particularly where the danger will be great even though the enterprise is conducted with every possible precaution. The basis of the liability is the defendant's intentional behavior in exposing those in his vicinity to such a risk. The conduct which is dealt with here occupies something of a middle ground. It is conduct which does not so far depart from social standards as to fall within the traditional boundaries of negligence - usually because the advantages which it offers to the defendant and to the community outweigh even the abnormal risk; but which is still so far socially unreasonable that the defendant is not allowed to carry it on without making good any actual harm which it does to his neighbors.
>
> "The courts have tended to lay stress upon the fact that the defendant is acting for his own purposes, and is seeking a benefit or a profit of his own from such activities, and that he is in a better position to administer the unusual risk by passing it on to the public than is the innocent victim. The problem is dealt with as one of allocating a more or less inevitable loss to be charged against a complex and dangerous civilization, and liability is imposed upon the party best able to shoulder it. The defendant is held liable merely because, as a matter of social adjustment, the conclusion is that the responsibility should be his. This modern attitude, which is largely a thing of the last four decades, is of course a far cry from the individualistic viewpoint of the common law courts.

363. Liability for injuries caused by certain permissible activities in domestic law is called "strict" or "no-fault" liability. Strict liability has been imposed on a number of activities; some have a longer history than others. Before reviewing the application of a similar liability principle in inter-State relationship, it may be useful to briefly examine the law application of liability for permissible activities. One early application of what is called strict or no-fault liability in domestic law has been to the owners of dangerous animals; 3/ those who keep these animals are required to protect the community against the risk.

364. The concept of "strict liability" for damage caused by animals was recognized in Roman law. Under the actio de pauperis derived from the XII Tables, an owner was obligated either to compensate the victim for his loss, or to make surrender of the offending animal. 4/ The Civil Codes of many States, including France, Belgium and Italy, also impose strict liability for the owner of an animal or one who avails himself of it for the damage which the animal causes, whether the animal was in his keeping or whether it had strayed or escaped. 5/ In the Civil Code of the Federal Republic of Germany, exceptions to strict liability are given only in

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(continued)

> "While such strict liability often is said to be imposed 'without fault', it can scarcely be said that there is less of a moral point of view involved in the rule that one who innocently causes harm should make it good.
>
> "...
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> "... The basis of his liability in either case is the creation of an undue risk of harm to other members of the community. It has been said that there is 'conditional fault', meaning that the defendant is not to be regarded as at fault unless or until his conduct causes some harm to others, but he is then at fault, and to be held responsible. If this analysis helps anyone, it is certainly as permissible as another.
>
> "Once the legal concept of 'fault' is divorced, as it has been, from the personal standard of moral wrongdoing, there is a sense in which liability with or without 'fault' must beg its own conclusion. The term requires such extensive definition, that it seems better not to make use of it at all, and to refer instead to strict liability, apart from either wrongful intent or negligence."*

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* W. Prosser, The Law of Torts, 4th ed. (1971), pp. 494-498, footnotes omitted.

3/ W. Prosser, op. cit., pp. 496-498.

4/ "International Encyclopedia of Comparative Law, chap. 5, p. 11.

5/ Ibid., p. 12.

the case of domestic animals used by the owner in his profession, business or maintenance. 6/

365. Strict liability is also recognized for owners or keepers of animals in Argentina (CC, art. 1126), Brazil (CC, art. 1527), Colombia (CC, art. 2353), Greece (CC, art. 924), Hungary (CC, art. 353), Mexico (CC, art. 1930), the Netherlands (CC, art. 1404), Poland (CC, art. 431), Switzerland (CC, art. 56) and Yugoslavia. 7/ Strict liability for damage caused by fire does not have a wide recognition in domestic law and the elements of fault or negligence are still essential for liability. For example, the French Civil Code, in article 1384, holds a person who possesses by whatever right all or part of a building or of personal property in which a fire occurs is liable vis-à-vis third persons for damage caused by such fire only if it is proved that it was attributed to his fault or to the fault of a person for whom he is responsible.

366. The theory of strict liability has been incorporated in the Workmen's Compensation Acts in the United States; the employer is strictly liable for injuries to his employees. The policy behind liability for employers is one of "social insurance" and of determining who can best carry the loss when there is no fault involved. 8/ These acts, however, do not cover all commercial activities and a number of them have been left out. However, in the last few years in the United States there has been a strong advocacy for "strict liability" on a broader scale and within the concept of workmen's compensation. 9/ Strict liability has also been recognized for employers in France. Under article 1 of the Loi concernant les responsabilités des accidents dont les ouvriers sont victimes dans leur travail of 1898, accidents happening because of the act of work or at work to workers and employees give to the victim or his representatives the right to demand an indemnity from the employer when, as a result of the accident, the employee cannot work for more than four days.

367. The concept of strict liability for abnormally dangerous activities and things is comparatively new. The leading case affecting the domestic laws of England and the United States from which such strict liability doctrine is alleged to have

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6/ Article 833 of the Federal Republic of Germany's Civil Code, adopted in 1908; ibid., p. 13.

7/ Ibid., p. 14.

8/ The concept of workmen's compensation derives from the old common law duties of the master for the protection of his servants. W. Prosser, op. cit., p. 525; see also p. 531, footnote 43.

9/ Ibid., pp. 525-537.

developed is Rylands v. Fletcher, 10/ decided in England in 1868. Justice Blackburn, in the Exchequer Chamber, stated:

> "We think that the true rule of law is that the person who for his own purposes brings on his land and collects and keeps there anything likely to do mischief if it escapes, must keep it at his peril, and if he does not do so is prima facie answerable for all the damage which is the natural consequence of its escape." 11/

This broad language was later limited by the House of Lords. It was stated that this principle applied only to a "non-natural" use of the defendant's lands, as distinguished from "any purpose for which it might in the ordinary course of the enjoyment of land be used". More than a hundred subsequent decisions in England followed the ruling of this case and strict liability has been confined to things or activities which are "extraordinary", "exceptional" or "abnormal", to the exclusion of those which are "usual and normal". 12/ This doctrine does not appear to be applicable to ordinary use of land or to such a use as is proper for the benefit of the general community. 13/ In determining what is a "non-natural use" the English courts appear to have looked not only to the character of the thing or activity in question, but also to the place and manner in which it is maintained and its relation to its environment. 14/

10/ Rylands v. Fletcher, Law Reports, 3 House of Lords (1868), p. 330. For a description of this case and its implication in American law see Prosser, supra, and Anderson, "The Rylands v. Fletcher doctrine in America: abnormally dangerous, ultrahazardous, or absolute nuisance?", Arizona State Law Journal (1978), pp. 99-135.

11/ Fletcher v. Rylands, Law Reports, 1 Exchequer (1866), pp. 265 and 279-280.

12/ W. Prosser, op. cit., p. 506, and footnotes 48, 50 and 51.

13/ The House of Lords stopped the expansion of that doctrine in a case in which the plaintiff, a government inspector, was injured by an explosion in a defendant's munitions plant. The judges in this case limited the principle of strict liability to cases in which there had been an "escape" of a dangerous substance from land under the control of the defendant, and two other judges thought it was not applicable to personal injury. This decision is a sudden departure from the holdings of the leading case; however, it is uncertain that this case would change the trend in strict liability put forward by the decision of Rylands v. Fletcher. Ibid., footnote 52.

14/ Stallybrass, "Dangerous things and the non-natural user of land", 3 Cambridge Law Journal (1929), pp. 376 and 387. See also the Law Commission, Civil Liabilities for Dangerous Things and Activities (London, 1970).

368. In the United States, Rylands v. Fletcher was accepted by a large number of American courts. 15/ The courts of New York, New Hampshire and New Jersey rejected the holdings. It has been submitted that in those cases the rule of Rylands v. Fletcher was "misstated and as misstated was rejected, in cases in which it had no proper application in the first place"; 16/ those cases were clearly cases of customary, natural uses "to which the English Courts would certainly never have applied the rule". 17/ The American Restatement of Torts 18/ has adopted the principle of Rylands v. Fletcher, but has limited it to ultrahazardous activities of the defendant. Section 520 enumerates factors to be considered in determining whether an activity is abnormally dangerous:

(a) Existence of a high degree of risk of some harm to the person, land or chattels of others;

(b) Likelihood that the harm that results from it will be great;

(c) Inability to eliminate the risk by the exercise of reasonable care;

(d) Extent to which the activity is not a matter of common usage;

(e) Inappropriateness of the activity to the place where it is carried on;

(f) Extent to which its value to the community is outweighed by its dangerous attributes.

Ultrahazardous activities have been defined as those which necessarily involve a risk of serious harm to the person, land or chattels of others which cannot be eliminated by the exercise of the utmost care and is not a matter of common usage. This has been criticized on the grounds that it is narrower than the ruling in Rylands v. Fletcher for its emphasis on the nature of the activity, "extreme danger and impossibility of eliminating it with all possible care", rather than on its relation to its surroundings. 19/ At the same time the Restatement is broader than the ruling of the case, for it does not limit the concept to cases where the material "escapes" from the defendant's land.

369. Strict liability for ultrahazardous activities appears to have been considered

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15/ W. Prosser, Selected Topics on the Law of Torts (1954), pp. 149-152.

16/ W. Prosser, Selected Topics on the Law of Torts, p. 150.

17/ Ibid.

18/ American Restatement of Torts (1938), sects. 519-524A.

19/ See W. Prosser, supra, p. 158, note 1.

as covered by article 1384 (1) of the French Civil Code, 20/ which stipulates that "a person is liable not only for the damage he causes by his own act, but also for that caused by the acts of persons for whom he is responsible or by things that he has under his guard". Under the terms laid down by this article and first confirmed by the Cour de Cassation, in June 1896, the liability will be established when the plaintiff shows only that he suffered damage from an inanimate object in the defendant's keeping: 21/

> "A literal interpretation of the article [1384] undoubtedly gives a result comparable to - or rather more far-reaching than - that in Rylands v. Fletcher, for there is nothing in the words of the article to restrict liability to cases where defendant can be proved to have been negligent in the custody of things, or even to things which are inherently dangerous." 22/

370. The concept of strict liability appears also to have been accepted in the legal system of the Soviet Union. The Civil Code of the Soviet Union contained a chapter entitled "Obligations arising from injury caused to another" (sects. 403-415) which corresponded to torts and delictual liabilities in civil and common law systems. That chapter proposed that "causation" alone should be sufficient to establish liability and that the requirement of "fault" was often responsible for injustice. Section 404 provided as follows:

> "Individuals and enterprises whose activities involve increased hazard for persons coming into contact with them, such as railways, tramways, industrial establishments, dealers in inflammable materials, keepers of wild animals, persons erecting buildings and other structures, and the like, shall be liable for the injury caused by the source of increased hazard, if they do not prove that the injury was the result of force majeure or occurred through the intent or gross negligence of the person injured." 23/

20/ See L. Mazeaud and Tunc, 2 Responsabilité civile, 5th ed. (1958), p. 342; Von Mehren and Gordley, eds., The Civil Law System, 2nd ed. (1977), p. 555; F. Lawson, Negligence in the Civil Law (1955), pp. 45-50; Rodière, "Responsabilité civile et risque atomique", 11 Revue internationale de droit comparé (1959), p. 505; and Starck, "The foundation of delictual liability in contemporary French law: an evaluation and a proposal", 48 Tulane Law Review (1974), pp. 1043 and 1044-1049.

21/ See also Jand'heur v. Les Galeries Belfortaises, Dalloz Périodique I (1930), p. 57. This case also established a presumption of fault on the part of the person who has under his guard the inanimate object causing the damage.

22/ Lawson, Negligence in the Civil Law (1955), p. 44.

23/ See Gsovski, 1 Soviet Civil Law (1948), pp. 485-555; Gsovski and Grzybowski, Government, Law and Courts in the Soviet Union and Eastern Europe (1955).

371. Having rejected the Roman law maxim cujus commodum ejus periculum, this section has been justified largely in terms of social policy, including the promotion of safety measures and the hardship imposed on a plaintiff if the enterprise could escape merely by showing that all reasonable care had been taken. 24/ The above article was replaced in 1964 by article 454, basing itself on article 90 of the Fundamental Principles of 1961. Article 454 provides:

> "Liability for harm caused by a source of increased danger. Organisations and citizens whose activity involves increased danger for those in the vicinity (transport organisations, industrial enterprises, building projects, possessors of motor cars, etc.) must make good the harm caused by the source of increased danger unless they prove that the harm arose in consequence of irresistible force or as a result of the intention of the victim." 25/

372. The recognition of strict liability has been embodied in the Polish Civil Code of 1964. Articles 435 to 437 of the Civil Code recognize strict liability for damage caused by ultrahazardous activities. The Civil Code of the Democratic Republic of Germany, adopted in 1975, incorporated strict liability in article 344 in which enterprises whose activity lead to increased danger to others are strictly liable for damage resulting from that activity. The same is true for damage which results from the operation of enterprisers as well as the locating of things and substances with regard to which an increased danger for the life, the health and the property of others cannot or cannot altogether be excluded. 26/

373. Article 178 of the Egyptian Civil Code, article 231 of the Iraqi Civil Code, article 291 of the Jordanian Civil Code and article 161 of the Sudanese Civil Code establish the strict liability of persons in charge of machines or objects requiring special care. Article 133 of the Algerian Civil Code goes even further and recognizes strict liability for a person in charge of any object when that object causes damage. The Austrian Civil Code (art. 1318) and the Mexican Civil Code (of 1928, arts. 1913 and 1932) also recognize strict liability for dangerous activities or things.

374. Strict liability has been applied in the field of defective products. The policies behind this practice are stated in Escola v. Coca Cola Bottling Co.:

24/ Hardy, "Nuclear liability: the general principles of law and further proposals", 36 British Yearbook of International Law (1960), pp. 223 and 235; and Tay, "Principles of liability and the 'source of increased danger' in the Soviet law of tort", 18 International and Comparative Law Quarterly (1969), pp. 424-425.

25/ RSFSR 1964 Grazh. Kod. (Civil Code), sect. 454, quoted in Tay, ibid., p. 427.

26/ See also articles 345 and 347 of the German Democratic Republic Civil Code of 1975.

"Those who suffer injury from defective products are prepared to meet its consequences. The cost of an injury and the loss of time or health may be an overwhelming misfortune to the persons injured, and a needless one, for the risk of injury can be insured by the manufacturer and distributed among the public as a cost of doing business. It is to the public interest to discourage the marketing of products having defects that are a menace to the public. If such products nevertheless find their way into the market it is to the public interest to place the responsibility for whatever injury they may cause upon the manufacturer, who, even if he is not negligent in the manufacture of the product, is responsible for its reaching the market. However intermittently such injuries may occur and however haphazardly they may strike, the risk of their occurrence is a constant risk and a general one. Against such a risk there should be general and constant protection and the manufacturer is best situated to afford such protection." 27/

This policy has become the official doctrine in some federated states in the United States. In some other states, such as New York, the above doctrine was supported by additional reasons not required in that case. In its modified form, the strict liability for products has been based on the theory that the manufacturer was in breach of an implied warranty to the plaintiff that an article was properly made. 28/ The use of "warranty" has been strongly disapproved by a leading American tort authority as a crutch to too much luggage in the way of undesirable complications, and is more trouble than it is worth". 29/

375. In a number of European countries, "strict liability" has not been fully applicable in cases of injury caused by the consumption or use of manufactured products. In the Federal Republic of Germany, for example, liability of the manufacturer traditionally required proof of fault and the concept of strict liability was refused. In cases where the injured consumer and the manufacturer are related by contract, the basis for a legal action is the bad performance of the contract and, in this case, fault of the manufacturer is usually presumed. 30/ In

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27/ 24 California Reporters, 2nd ed. (1944), pp. 453 and 462.

28/ Goldberg v. Kollsman Instrument Corp., 240 New York State, 2nd ed., p. 592.

29/ W. Prosser, The Law of Torts, p. 656. Sachs, "Negligence or strict product liability: is there really a difference in law or economics?", 8 Georgia Journal of International and Comparative Law (1978), pp. 259-278, and Gingerich, "The interagency task force blueprint for reforming product liability tort law in the United States", loc. cit. (1979), pp. 279-310.

30/ See the Civil Code of the Federal Republic of Germany, sect. 282; RG 30 March 1942, RGZ 169, 84, 97; BGH 18 December 1952, BGHZ 8, 239, 241, quoted in 11 International Encyclopedia of Comparative Law, chap. 5, p. 74, footnote 663.

the case where parties are not related by contract, action could only be based on the notion of a wrongfully violated duty of security to the public, 31/ or on the notion of the liability of a master for damage done by his servant. 32/ Some exceptions to that rule developed but in general it was true that the consumer normally sued only his contracting party, who was usually not the manufacturer. 33/

376. Similarly, the avant-project of the Civil Code of the Netherlands provides that a person who manufactures defective products not knowingly and constitutes a danger to persons or things, is liable, if that danger materializes, as if the defect was known to him, unless the manufacturer can prove that the injury was due neither to his own fault or to that of another who, at his orders, was engaged on the product, nor to the failure of the appliances used by him. 34/ There are, however, some Dutch jurists who wish to render the manufacturer responsible for unexplained defects or failures of the product, 35/ i.e. to hold the manufacturer strictly liable for damage caused by its products. The domestic law of the Soviet Union does not contain provisions relating to strict liability of the manufacturer of bad products. Article 454 of its Civil Code, however, expresses a general principle which makes a person strictly liable if he causes injury by an extra-hazardous means. Whether this provision would be applicable to manufacturers as opposed to "owners" is unclear. 36/

377. Strict liability has also been introduced in the Aeronautics Act of 1922 37/ in the United States. This Act, adopted in whole or in part by some 24 American states, provides "absolute liability" for the owner of aircraft for injuries to persons or property on the land or water beneath, caused by the ascent, descent or flight of the aircraft or the dropping or falling of any object therefrom, unless

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31/ Ibid., Civil Code, sect. 823, para. 1.

32/ Ibid., Civil Code, sect. 831.

33/ Ibid.

34/ International Encyclopedia of Comparative Law, chap. 5, pp. 73-74.

35/ Ibid., p. 74, footnote 662. See also the Italian Law, ibid., p. 74.

36/ See Orban, "Product liability: a comparative legal restatement - foreign national law and EEC directive", 8 Georgia Journal of International and Comparative Law (1978), pp. 342 and 371-373.

37/ 11 Uniform Laws Annotated, pp. 159-171. This act was withdrawn in 1938 by the National Conference of Commissioners on Uniform State Laws and was replaced by other legislations drafted by that body, imposing substantially the same limited absolute liability. See Handbook of National Conference of Commissioners on Uniform State Laws (1938), p. 318, Uniform Aviation Liability Act, art. II, paras. 201-202.

the injury was caused in whole or in part by the negligence of the person injured, or of the owner or bailee of the property damaged. The object of the Act was to place the liability for damage caused by accidents of aircraft upon operators, and to protect innocent victims, even though the accident may not be attributable to the fault of the operator. 38/

378. A number of Latin American and European countries have also adopted "strict liability" often similar to the 1933 and 1952 Rome Conventions for accidents involving aircraft. Argentina, Guatemala, Honduras and Mexico are among Latin American countries which imposed strict liability based on the concept of risk, 39/ and among European countries having done the same are Italy, Spain, Denmark, Sweden, Norway, Finland, Switzerland, France and the German Federal Republic. 40/

379. Strict liability has also been imposed on the owners and the operators of sources of power for damage caused by their storage or operations. The underlying concept for strict liability in this area may vary from the concept "that electricity is a thing under one's guard" 41/ to "owner is presumed to be at fault", 42/ the "concept of dangerous things", 43/ or the "concept of dangerous activity". 44/

380. In its origin, nuisance meant nothing more than harm or annoyance. 45/ Strict liability has been imposed in cases of absolute nuisance, without regard to the defendant's intent or care. There has been little discussion in the nuisance cases of the basis of liability. The reasons for this have been described as the following:

> "One reason is that nuisance suits frequently have been in equity, seeking an injunction, so that the question is not so much one of the nature of the defendant's conduct as of whether he shall be permitted to continue

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38/ "Is special aviation liability legislation essential", 19 Journal of Air Law and Communications, p. 167; Prentiss et al. v. National Airlines, Inc., 112 Federal Supplement, pp. 306 and 312.

39/ 11 International Encyclopedia of Comparative Law, chap. 5, p. 46.

40/ Ibid., pp. 45-46.

41/ France, CC art. 1384, ibid., p. 49.

42/ Argentina, CC art. 1135, ibid.

43/ United States and United Kingdom, ibid.

44/ Italy, CC art. 2050, ibid.

45/ W. Prosser, Selected Topics on the Law of Torts (1954), p. 164.

it. Even where the action is one for damages it usually has been brought after long continuance of the conduct and repeated requests to stop it; and whatever may have been his state of mind in the first instance, the defendant's persistence after notice of the harm he is doing takes on the aspects of an intentional tort. Another reason is that in nuisance cases the threat of future harm may in itself amount to a present interference with the public right or the use and enjoyment of land, so that the possible bases of liability tend to merge and become more or less indistinguishable. Nevertheless it is quite clear that a substantial part of the law of nuisance rests upon neither wrongful intent nor negligence." 46/

381. It has been claimed that the concept of absolute nuisance is closely related to the rule in Rylands v. Fletcher. To distinguish the two, some have claimed that the latter involves conduct which is not wrongful in itself, and so will not be prohibited or enjoined in advance, but will make the defendant strictly liable if it causes actual damage; whereas a nuisance is in itself wrongful, and may always be enjoined. That distinction has been rejected by some on the basis that there are no cases or decisions to sustain it. 47/ It has been stated that absolute nuisance and the Rylands rule are related to one another as intersecting circles; they have a large area in common, but nuisance is the older tort and its historical development has limited it to two kinds of interference with the public right and with the enjoyment of land, excluding such other damage as personal injuries not connected with either. 48/ Thus the principle underlying each appears to be the same and they are undistinguishable except by the accident of their history. 49/

382. Many legal systems have shown a persistent tendency to recognize the concept of "strict liability" while maintaining liability dependent on "fault" as the general principle. Earlier exposure of legal systems to strict liability has been in the areas of keeping animals or causing fire and was based on reasons of morality.

383. As legal systems developed, the concept of strict liability appears to have been introduced as a means to accommodate diverse social interests. The reason for the imposition of this concept on the relationship between employers and employees under certain conditions: ultrahazardous activities, product liability, air carriers, etc., has often been social necessity rather than morality.

46/ P. Winfield, "The myth of absolute liability", 42 Law Quarterly Review (1926), p. 37.

47/ W. Prosser, Selected Topics on the Law of Torts (1954), pp. 166 and 169-170.

48/ Ibid., p. 172.

49/ P. Winfield, "Nuisance as a tort", 4 Cambridge Law Journal (1931), pp. 189 and 195.

384. Strict liability as a legal concept now apears to have been accepted by most legal systems, especially those of technologically developed countries with more complex tort laws. The extent of activities subject to strict liability may differ; in some countries it is more limited than in others. The legal basis for strict liability also varies from "presumed fault", to the notion of "risk", "dangerous activity involved", etc. But it is evident that strict liability is a principle common to a sizable number of countries belonging tc different legal systems, that have particularly been confronted by activities relevant to the use of this principle. While States may differ as to the particular application of this principle, their understanding and formulation of it is substantially similar.

385. In examining municipal laws, the following characterizations of strict liability may be drawn:

(1) The concept of strict liability has been stipulated in the Civil Code or in general terms in the decisions of domestic courts, as opposed to special legislation. This demonstrates the importance and the acceptance of strict liability as a general legal principle by many States with diverse legal systems.

(2) In municipal law, the definition of strict liability is characterized by its lack of reference to fault; "fault" is not a criterion of liability.

(3) It has been recognized by municipal law that it would be unequitable and unduly harsh to the public if the operators of hazardous activities were permitted to avoid liability for damage caused by their industry under the rules of "fault liability".

(4) Municipal law limits strict liabilty to "the kind of harm, the risk of which makes the activity abnormally dangerous" [sect. 519 (2), American Restatement of Torts]. The Soviet Supreme Court has held that a railroad is not liable, under section 454 of the Civil Code, for the injury sustained by a passenger "who was the victim of a hold-up on the train, because such injury was not caused by the increased hazard incidental to railways as a special kind of transportation". 50/ There must be a causal nexus between the activity and the harm from which relief is sought and, even if causation is admitted, liability may be avoided under certain conditions: 51/

(a) When the victim assumes the risk of harm; 52/

50/ Gsovski, Soviet Civil Law, p. 506.

51/ See Kelsen, "State responsibility and the abnormally dangerous activity", 13 Harvard International Law Journal (1972), pp. 197 and 230.

52/ Restatement of Torts, sect. 523 (Draft No. 10, 1964).

(b) When the victim intentionally suffers the damage; 53/ however, a contributory negligence of the plaintiff is not a defense to the strict liability of one who carries on an abnormally dangerous activity. 54/

(c) When the damage is caused by an irresistible force or force majeure. 55/

386. The introduction and application of the concept of liability in inter-State relationship, on the other hand, is relatively newer and less developed than in domestic law. One reason for this late start may have been the fact that States were not so involved in activities which could injure other States and their subjects. The difficulties in accommodating the concept of liability with other well-established international law concepts such as domestic jurisdiction and territorial sovereignty should not be ignored. Of course, the development of no-fault liability in domestic law faced similar difficulties. But the social necessity, in many States, led to accommodating this new legal concept with others in a way which serves social policies and public order. In inter-State relationships, activities which may cause injuries to others, beyond the territorial jurisdiction or control of the acting State, have, in most cases, been singled out, and the liability issue has been subject to agreements between States. This may be more similar to legislations for liability, such as those related to the liability of keepers or owners of animals, product liability, employers' liability, etc. But in State practice, there are, nevertheless, a few references to a broader concept of liability, such as the principle of due care, good neighbourliness, etc.

387. It is not suggested here that the development of the liability concept in State practice has the same content and procedure as in domestic law. The domestic law references are mentioned only to provide some guidelines when appropriate for understanding the concept of liability and its development.

53/ Ibid., sect. 524 (2). RSFSR 1964 Grazh. Kod., sect. 454. Tay, "Principles of liability and the 'source of increased danger' in the Soviet law of tort", 18 International and Comparative Law Quarterly, p. 441.

54/ American Restatement of Torts, sect. 545 (1).

55/ Ibid., Tay, supra, pp. 441-442. French Civil Code, art. 1384, (69 ed. Petits Codes Dalloz 1969-1970); Jand'heur v. Les Galeries Belfortaises, p. 57.

Multilateral agreements

388. Sometimes the main purpose of some multilateral agreements appears to be to resolve the question of liability and compensation which may be involved in certain activities without limiting or hindering the activities themselves. It seems that a policy decision has been made that such activities should be allowed to be undertaken regardless of the injuries they may cause. Agreements have only been made to deal with liability, compensation and jurisdictional questions which may arise from an accident, such as the Convention on Civil Liability for Oil Pollution Damage Resulting from Exploration for and Exploitation of Seabed Mineral Resources. The preamble of the Convention provides:

> "The States Parties to this Convention,
>
> "Conscious of the dangers of oil pollution posed by the exploration for, and exploitation of, certain seabed mineral resources,
>
> "Convinced of the need to ensure that adequate compensation is available to persons who suffer damage caused by such pollution,
>
> "Desiring to adopt uniform rules and procedures for determining questions of liability and providing adequate compensation in such cases,
>
> "..."

389. Some other conventions have referred to the concept of liability but have not resolved the compensation and jurisdictional questions. The Kuwait Regional Convention on the Protection and Development of the Marine Environment and the Coastal Areas, for example, provides that the Contracting States shall co-operate to formulate rules and procedures for civil liability and compensation for damage resulting from pollution of the marine environment. The Convention itself does not stipulate those rules and procedures. Article XIII of the Convention provides:

> "ARTICLE XIII
>
> "Liability and compensation
>
> "The Contracting States undertake to co-operate in the formulation and adoption of appropriate rules and procedures for the determination of:
>
> "(a) civil liability and compensation for damage resulting from pollution of the marine environment, bearing in mind applicable international rules and procedures relating to those matters; and
>
> "(b) liability and compensation for damage resulting from violation of obligations under the present Convention and its protocols."

390. A similar language is stipulated in article 12 of the Convention on the Protection of the Mediterranean Sea and article 17 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area. Article 12 of the former Convention provides:

"Article 12

"Liability and compensation

"The Contracting Parties undertake to co-operate as soon as possible in the formulation and adoption of appropriate procedures for the determination of liability and compensation for damage resulting from the pollution of the marine environment deriving from violations of the provisions of this Convention and applicable protocols."

391. Article 17 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area provides:

"Article 17

"Responsibility for damage

"The Contracting Parties undertake, as soon as possible, jointly to develop and accept rules concerning responsibility for damage resulting from acts or omissions in contravention of the present Convention, including, inter alia, limits of responsibility, criteria and procedures for the determination of liability and available remedies."

392. Article X of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter recommends that the contracting State develop rules and procedures for liability, but is based on a different presumption. It assumes that there are existing principles of international law on State responsibility for damage to the environment of other States or to any other area of the environment.

393. Thus, article X stipulates that procedures for the assessment of liability and settlement of disputes should be formulated in accordance with those principles of international law:

"In accordance with the principles of international law regarding State responsibility for damage to the environment of other States or to any other area of the environment, caused by dumping of wastes and other matter of all kinds, the Contracting Parties undertake to develop procedures for the assessment of liability and the settlement of disputes regarding dumping."

394. Article 235 of the Convention on the Law of the Sea uses a different and a more complex language. It provides that States shall co-operate to "implement" the existing international law and its future development relating to responsibility and liability for assessment of compensation for damage and the settlement of disputes:

"Article 235

"Responsibility and liability

"1. States are responsible for the fulfilment of their international

obligations concerning the protection and preservation of the marine environment. They shall be liable in accordance with international law.

"2. States shall ensure that recourse is available in accordance with their legal systems for prompt and adequate compensation or other relief in respect of damage caused by pollution of the marine environment by natural or juridical persons under their jurisdiction.

"3. With the objective of assuring prompt and adequate compensation in respect of all damage caused by pollution of the marine environment, States shall co-operate in the implementation of existing international law and the further development of international law relating to responsibility and liability for the assessment of and compensation for damage and the settlement of related disputes, as well as, where appropriate, development of criteria and procedures for payment of adequate compensation, such as compulsory insurance or compensation funds."

This article presumes that there are existing international laws governing liability issues.

395. Finally, other conventions only request their contracting parties to co-operate and develop rules on liability and compensation in conformity with international law. For example, article 14 of the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region provides:

"Article 14

"Liability and compensation

"The Contracting Parties shall co-operate with a view to adopting appropriate rules and procedures, which are in conformity with international law, in the field of liability and compensation for damage resulting from pollution of the Convention area."

Bilateral agreements

396. It appears that most bilateral agreements are not designed to resolve the question of liability for extraterritorial injuries. Some bilateral agreements don't even state anything which might bear on liability. Some make general references which may be interpreted that other questions, including the liability, will be dealt with under a different formula. The 1983 Agreement between the United States and Mexico, 56/ for example, states, in article 17, that the Agreement does not affect the rights and obligations of the parties under international agreements to which they are a party or existing or future agreements between the parties themselves:

56/ Agreement between the United States of America and the United Mexican States on Co-operation for the Protection and Improvement of the Environment in the Border Area (14 August 1983).

"ARTICLE 17

"Nothing in this agreement shall be construed to prejudice other existing or future agreements concluded between the two parties, or affect the rights and obligations of the parties under international agreements to which they are a party."

397. Some agreements explicitly state that they do not examine the question of liability: for example, the Treaty between Canada and the United States regarding weather modification 57/ excludes the resolution of liability question from the Treaty. The Treaty, after formulating certain procedures regarding the weather modification activities affecting the contracting parties provides, in article VII, that the Treaty should not be construed as affecting the liability and responsibilty issues arising between two countries, nor as implying the existence of any generally applicable rule of international law. Article VII provides:

"Nothing herein relates to or shall be construed to affect the question of responsibility or liability for weather modification activities, or to imply the existence of any generally applicable rule of international law."

This article does not confirm or deny the existence of any liability principles accepted by two States. Nevertheless, the agreement recognizes that such a question may be relevant and may be raised in weather modification activities.

398. In another Agreement between Canada and the United States regarding certain rocket launches, 58/ the two Governments agreed, in the event of loss or damage resulting from those launches, to consult each other promptly, prior to the settlement of any claim, in order to expedite such claims in accordance with international law and the domestic law of each State. A preamble paragraph of the Agreement reads:

"The Embassy has the honor to propose that, in the event of such loss or damage, the Government of the United States and the Government of Canada shall consult promptly, and in any case prior to the settlement of any claim arising out of these launches, with a view to arriving at an expeditious and mutually acceptable disposition of such claim, in accordance with international law and the domestic law of each state. These consultations shall take into account the following considerations:

"..."

57/ Agreement between Canada and the United States of America Relating to the Exchange of Information on Weather Modification Activities (26 March 1975).

58/ Agreement effected by Exchange of Notes between the United States of America and Canada concerning Liability for Loss or Damage from Certain Rocket Launches (31 December 1974).

399. The 1909 Convention between Canada and the United States regarding their boundary waters 59/ provides an example of a different language on liability. Article II refers to legal remedies available to parties suffering injuries caused by activities occurring in the boundary waters within the territorial control of the other State. In such cases, under article II, the injured parties are entitled to the local legal remedies available in the country where the activities occurred. Article II provides:

> "Each of the High Contracting Parties reserves to itself or to the several State Governments on the one side and the Dominion or Provincial Governments on the other as the case may be, subject to any treaty provisions now existing with respect thereto, the exclusive jurisdiction and control over the use and diversion, whether temporary or permanent, of all waters on its own side of the line which in their natural channels would flow across the boundary or into boundary waters; but it is agreed that any interference with or diversion from their natural channel of such waters on either side of the boundary, resulting in any injury on the other side of the boundary, shall give rise to the same rights and entitle the injured parties to the same legal remedies as if such injury took place in the country where such diversion or interference occurs; but this provision shall not apply to cases already existing or to cases expressly covered by special agreement between the parties hereto.
>
> "It is understood, however, that neither of the High Contracting Parties intends by the foregoing provision to surrender any right, which it may have, to object to any interference with or diversions of waters on the other side of the boundary the effect of which would be productive of material injury to the navigation interests on its own side of the boundary." [Emphasis added.]

Hence the applicable liability rules are either the domestic law of Canada or of the United States.

400. Article 26 of the German-Danish frontier water treaty 60/ provides remedies for individuals who suffered injuries. It states that any person who suffers damage as a result of a new water regulation or alteration has the right to claim full compensation from the person who benefited from those regulations. The article does not refer to any particular domestic or international law principles on liability. It states only that the matter would be decided by the Frontier Water Commission. Article 26 provides:

59/ Convention concerning the Boundary Waters between the United States and Canada (11 January 1909).

60/ Agreement for the Settlement of Questions relating to Watercourses and Dikes on the German-Danish Frontier (10 April 1922).

"Any person who suffers loss or damage in consequence of the regularisation or of the alteration in the condition of the watercourse occasioned by such regularisation has the right to claim full compensation from the person who benefits by the work in question. The matter shall be decided by the Frontier Water Commission."

Judicial decisions and State practice other than agreements

401. The concept of liability for damage caused by an activity beyond the territorial jurisdiction or control of the acting State appears to have been developed through State practice to a limited extent for some potential harmful activities. Some sources refer to the concept in general terms, leaving its content and procedure for implementation to future developments. Other sources deal with the concept of liability only in the instant case.

402. In the past, general references to liability have considered liability as an outgrowth of failure to exercise "due care" or "due diligence". In determining whether there has been a failure to exercice due diligence, the analyses have adopted a balancing interest test. The weighing is similar to that used in determining harm and the permissibility of harmful activities for impact assessment. An early statement about liability for failure to exercise due care was made in the Alabama Claims. In that dispute between the United States and the United Kingdom over the alleged failure of the United Kingdom to fulfil its duty of neutrality during the American Civil War, both sides attempted to articulate what "due diligence" entails. The United States argued that due diligence is proportioned to the magnitude of the subject and to the dignity and strength of the power which is to exercise it:

> "Due Diligence
>
> "The rules of the treaty, said the Case of the United States, imposed upon neutrals the obligation to use due diligence to prevent certain acts. These words were not regarded by the United States as changing in any respect the obligations imposed by international law. 'The United States', said the Case, 'understands that the diligence which is called for by the rules of the treaty of Washington is a due diligence - that is, a diligence proportioned to the magnitude of the subject and to the dignity and strength of the power which is to exercise it; a diligence which shall, by the use of active vigilance, and of all the other means in the power of the neutral, through all stages of the transaction, prevent its soil from being violated; a diligence that shall in like manner deter designing men from committing acts of war upon the soil of the neutral against its will, and thus possibly dragging it into a war which it would avoid; a diligence which prompts the neutral to the most energetic measures to discover any purpose of doing the acts forbidden by its good faith as a neutral, and imposes upon it the obligation when it receives the knowledge of an intention to commit such acts, to use all the means in its power to prevent it. No diligence short of this would be 'due'; that is, commensurate with the emergency or with the magnitude of the results of negligence'." 61/

61/ J. B. Moore, International Arbitrations, vol. I, pp. 572-573. Emphasis added.

403. By contrast, the British Government argued that in order to show lack of due diligence and invoke responsibility and liability of a State, it must be proven that there had been a failure to use, for the prevention of harmful act, such care as Governments ordinarily employ in their domestic concerns:

> "... it was necessary to show that there had been 'a failure to use, for the prevention of an act which the government was bound to endeavor to prevent, such care as governments ordinarily employ in their domestic concerns, and may reasonably be expected to exert in matters of international interest and obligation'." 62/

The Tribunal referred to "due diligence" as a duty arising "in exact proportion to the risks to which either of the belligerants may be exposed, from a failure to fulfil the obligations of neutrality on their part". Thus, due diligence is a function of the circumstances of the activity.

404. Later State practice appears not to have referred so much to State liability arising out of a failure to exercise due care except in the area of the protection of aliens. These categories of claims include nationalization and confiscation of foreign properties, police protection and safety of foreigners, etc., which have been excluded from this study.

405. In the claim against the Union of Soviet Socialist Republics for damage caused by the Soviet satellite Cosmos 954, the Canadians averred to the general principle of the law of "absolute liability" for injury resulting from activities with a high degree of risk:

> "The standard of absolute liability for space activities, in particular activities involving the use of nuclear energy, is considered to have become a general principle of international law. A large number of states, including Canada and the Union of Soviet Socialist Republics, have adhered to this principle as contained in the 1972 Convention on International Liability for Damage caused by Space Objects. The principle of absolute liability applies to fields of activities having in common a high degree of risk. It is repeated in numerous international agreements and is one of 'the general principles of law recognized by civilized nations' (art. 38 of the Statute of The International Court of Justice). Accordingly, this principle has been accepted as a general principle of international law." 63/

406. Similarly, in the Trail Smelter Arbitration, the permanent régime called for compensation for injury to United States interests arising from fume emissions even if the smelting activities conformed fully to the permanent régime as defined in the decision:

62/ J. B. Moore, op. cit., p. 610.

63/ International Legal Materials, vol. 18, p. 907. Emphasis added.

"The Tribunal is of opinion that the prescribed régime will probably remove the causes of the present controversy and, as said before, will probably result in preventing any damage of a material nature occurring in the State of Washington in the future.

"But since the desirable and expected result of the régime or measure of control hereby required to be adopted and maintained by the Smelter may not occur, and since in its answer to Question No. 2, the Tribunal has required the Smelter to refrain from causing damage in the State of Washington in the future, as set forth therein, the Tribunal answers Question No. 4 and decides that on account of decisions rendered by the Tribunal in its answers to Question No. 2 and Question No. 3 there shall be paid as follows: (a) if any damage as defined under Question No. 2 shall have occurred since October 1, 1940, or shall occur in the future, whether through failure on the part of the Smelter to comply with the regulations herein prescribed or notwithstanding the maintenance of the régime, an indemnity shall be paid for such damage but only when and if the two Governments shall make arrangements for the disposition of claims for indemnity under the provisions of Article XI of the Convention; (b) if as a consequence of the decision of the Tribunal in its answers to Question No. 2 and Question No. 3, the United States shall find it necessary to maintain in the future an agent or agents in the area in order to ascertain whether damage shall have occurred in spite of the régime prescribed herein, the reasonable cost of such investigations not in excess of $7,500 in any one year shall be paid to the United States as a compensation, but only if and when the two Governments determine under Article XI of the Convention that damage has occurred in the year in question, due to the operation of the Smelter, and 'disposition of claims for indemnity for damage' has been made by the two Governments, but in no case shall the aforesaid compensation be payable in excess of the indemnity for damage; and further it is understood that such payment is hereby directed by the Tribunal only as a compensation to be paid on account of the answers of the Tribunal to Question No. 2 and Question No. 3 (as provided for in Question No. 4) and not as any part of indemnity for the damage to be ascertained and to be determined upon by the two Governments under Article XI of the Convention." 64/

407. The standard for imposing liability on the State under whose control an injurious condition exists is even more of obfuscated in the Corfu Channel decision. There the Court found that Albania knew or should have known of the mines lying within her territorial waters in sufficient time to give warning to other States and their subjects. The Court found that:

"In fact nothing was attempted by the Albanian authorities to prevent the disaster. These grave omissions involve the international responsibility of Albania.

64/ United Nations, Reports of International Arbitral Awards, vol. III, pp. 1980-1981.

"The Court therefore reaches the conclusion that Albania is responsible under international law for the explosions which occurred on October 22nd, 1946, in Albanian waters, and for the damage and loss of human life which resulted from them, and that there is a duty upon Albania to pay compensation to the United Kingdom." 65/

Owing to the difficult and circumstantial nature of the proof of Albania's knowledge of the injurious condition, it is unclear whether liability was based on a breach of the duty of due care in warning other international actors or on a standard of "strict liability" without regard to the concept of due care.

408. Some general statements regarding State liability are made by the Court in the Judgment which are of considerable importance. In one passage the Court stated that it is "every State's obligation not to allow knowingly its territory to be used for acts contrary to the rights of other States". 65a/ It should be noted that the passage is general statements of law and policy, not limited or narrowed to any specific case. When the Court is making a decision on a case in accordance with Article 38 of the Statute, it may also declare general statements of law. The aforementioned passages are among such statements. Therefore it may be concluded that while the decision of the Court addresses the point debated by the parties in Corfu Channel, it stresses a more general issue. It is a declaratory general statement regarding the conduct of any State which may cause extraterritorial injuries.

409. On the other hand the Lake Lanoux Tribunal responding to the Spanish allegation that the French projects would entail an abnormal risk to Spanish interests stated that only failure to take all necessary safety precautions would have entailed France's responsbility if Spanish rights had in fact been infringed. The Tribunal stated:

"The question was lightly touched upon in the Spanish Counter Memorial, which underlined the 'extraordinary complexity' of procedures for control, their 'very onerous' character, and the 'risk of damage or of negligence in the handling of the watergates, and of obstruction in the tunnel'. But it has never been alleged that the works envisaged present any other character or would entail any other risks than other works of the same kind which today are found all over the world. It has not been clearly affirmed that the proposed works would entail an abnormal risk in neighbourly relations or in the utilization of the waters. As we have seen above, the technical guarantees for the restitution of the waters are as satisfactory as possible. If, despite the precautions that have been taken, the restitution of the waters

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65/ I.C.J. Reports 1949, p. 23. Emphasis added.

65a/ Ibid., p. 22.

were to suffer from an accident, such an accident would be only occasional and, according to the two Parties, would not constitute a violation of Article 9." 66/

410. In other words, the responsibility would not arise as long as all possible precautions against the occurrence of the injurious event had been taken. Although the authority of the Tribunal was limited by the parties to the examination of compatibility of French activities on the Carol River with a treaty, the Tribunal did pay attention to dangerous activities. In the passage quoted above, the Tribunal stated that "it clearly affirmed that the proposed words [by France] would entail an abnormal risk in neighbourly relations or in the utilization of the waters". 67/ This passage may be interpreted as saying that the Tribunal was of the opinion that abnormally dangerous activities constitute a special problem, and if Spain had established that the proposed French project would entail an abnormal risk of injury in Spain, the decision of the Tribunal might have been different.

66/ International Law Reports (1957), pp. 123-124.

67/ Ibid.

A. Balancing interests

411. The concept of balancing interests has been developed in State practice to deal also with liability and compensation issues. Occasionally, the function of balancing interests in determining liability and compensation appears to be the same as that in the assessment of activities. However, some agreements have made a clear distinction between the two functions. The terms "equitable compensation", "fair compensation", "limited liability", etc., referred to in State practice, are indeed references to balancing interests in determining liability and compensation. The function of balancing interests in determinng liability and compensation has not led necessarily to eliminating compensation. It may affect the amount and the mode of payment of compensation.

412. The concept of balancing interests, of course, may differ depending upon particular circumstances. Liability and compensation negotiations should not hinder the undertaking and future development of commercial, industrial and technological activities which have become indispensable to and an inseparable part of human civilization. The concept of "limited liability", for example, has been developed to balance interests in relation to such activities. In relation to some other activities, considerations for balancing interests and priorities may be different; the interest of injured parties, for example, may prevail over the continuation of some potentially harmful activities.

413. The preamble of at least two multilateral conventions has explicitly incorporated the concept of balancing interests in their reference to liability and compensation. The preamble of the Convention on Third Party Liability in the Field of Nuclear Energy expressed the desire of the contracting parties to ensure "adequate" and "equitable" compensation for individuals who suffer injury caused by nuclear incidents, without hindering the development of peaceful uses of nuclear energy. The relevant paragraphs of the preamble provide:

> "The Contracting Governments,
>
> "...
>
> "Desirous of ensuring adequate and equitable compensation for persons who suffer damage caused by nuclear incidents whilst taking the necessary steps to ensure that the development of the production and uses of nuclear energy for peaceful purposes is not thereby hindered;
>
> "Convinced of the need for unifying the basic rules applying in the various countries to the liability incurred for such damage, whilst leaving these countries free to take, on a national basis, any additional measures which they deem appropriate, including the application of the provisions of this Convention to damage caused by nuclear incidents not covered therein;"

414. The language of the preamble of the Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface is even more explicit in stating its aim: balancing interests in determining liability and compensation. It stated the desire of the contracting parties to ensure "adequate" compensation for injured

individuals, while limiting in reasonable manner the extent of the liabilities incurred for such damage. The relevant paragraph of the preamble provides:

"The States signatory to this Convention

"Moved by a desire to ensure adequate compensation for persons who suffer damage caused on the surface by foreign aircraft, while limiting in a reasonable manner the extent of the liabilities incurred for such damage in order not to hinder the development of international civil air transport, and also ...".

415. Thus, the policy behind the Convention on Limitation of Liability for Maritime Claims appears to be the accomodation and the balancing of the interest of injured parties with the interest of the larger community in protecting and promoting maritime transportation essential to the present world economy. Paragraph 1 of article 2 itemizes claims subject to limitation, as follows:

"...

"(a) claims in respect of loss of life or personal injury or loss of or damage to property (including damage to harbour works, basins and waterways and aids to navigation), occurring on board or in direct connexion with the operation of the ship or with salvage operations and consequential loss resulting therefrom;

"(b) claims in respect of loss resulting from delay in the carriage by sea of cargo, passengers or their luggage;

"(c) claims in respect of other loss resulting from infringement of rights other than contractual rights, occurring in direct connexion with the operation of the ship or salvage operations;

"(d) claims in respect of the raising, removal, destruction or the rendering harmless of a ship which is sunk, wrecked, stranded or abandoned, including anything that is or has been on board such ship;

"(e) claims in respect of the removal, destruction or the rendering harmless of the cargo of the ship;

"(f) claims of a person other than the person liable in respect of measures taken in order to avert or minimize loss for which the person liable may limit his liability in accordance with this Convention, and further loss caused by such measures."

Paragraph 2 of this article provides that limitation on liability applies to the above claims even if brought by way of recourse or for indemnity under a contract or otherwise. Only claims under subparagraphs (d), (e) and (f) shall not be subject to limitation of liability to the extent that they relate to remuneration under a contract with the person liable. Paragraph 2 provides:

"2. Claims set out in paragraph 1 shall be subject to limitation of liability even if brought by way of recourse or for indemnity under a contract or otherwise. However, claims set out under paragraph 1 (d), (e) and (f) shall not be subject to limitation of liability to the extent that they relate to remuneration under a contract with the person liable."

416. The policy of accommodation and balancing of interests further appears in the International Convention relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, in which coastal States have been granted the compentence to take unilateral action on the high seas to protect their own interests. This Convention has accommodated the interests of the coastal State, by granting it unilateral action, with those of the flag State, where the flag State is entitled to compensation if measures taken by the coastal State go beyond what is reasonable. The security interest of the flag State has also been taken into account in the Convention where the coastal State is prevented from taking any action, under the Convention, if the ship involved in the casualty is a warship or other ship owned or operated by a State and used for the time being on government non-commercial service. Paragraph 2 of article I of the Convention protects the security interest of the flag State. It provides:

"...

"2. However, no measures shall be taken under the present Convention against any warship or other ship owned or operated by a State and used, for the time being, only on government non-commercial service."

417. In bilateral agreements, the concept of balancing interests when determining liability and compensation is similar to that used to determine harm for purposes of prior negotiation and consultation. The use of more explicit language in balancing interests when determining liability, as observed in multilateral treaties, does not appear in bilateral agreements. The reason may lie in the very nature of multilateral and bilateral agreements. Multilateral agreements are of a more general nature, dealing as they do with a more general set of activities, referring to more than two parties and accommodating various interests. Incorporation of all these factors would lead to the use of explicit language, for example, in balancing interests. In contrast, bilateral agreements are less complicated as they deal with a more precise subject and indeed sometimes a large part of the agreement is a detailed procedure for accommodating the two parties' interests when determining liability and compensation. Therefore, the use of explicit language in balancing interests may be unnecessary in bilateral agreements.

418. For example, article 27 of the German-Danish frontier water treaty 68/ is indeed based on the concept of balancing interests. Without mentioning the concept itself, the treaty requested that the cost of upkeep, if increased by a new regulation of watercourses, should be paid by those who benefit from the regulation regardless of whether they previously shared the cost of upkeep or not. Article 27 reads:

68/ Agreement for the Settlement of Questions Relating to Watercourses and Dikes on the German-Danish Frontier (10 April 1922).

"If the cost of upkeep is increased by the regularisation of a watercourse, the increase shall be apportioned among all the proprietors to whom the regularisation is of use or advantage, regardless of the fact whether they previously shared in the cost of upkeep or not."

The first paragraph of article 26 of the above treaty also bears on the concept of balancing interests. 69/

69/ Ibid. The first paragraph article 26 reads:

"Any person who suffers loss or damage in consequence of the regularisation or of the alteration in the coalition of the watercourse occasioned by such regularisation has the right to claim full compensation from the person who benefits by the work in question. The matter shall be decided by the Frontier Water Commission."

B. Operator's liability

419. In activities conducted primarily by private individuals, liability appears to be that of the operator. Some activities are conducted by both private individuals and government agencies but, nevertheless, the incidence of liability is much influenced by the concept of liability of the private operator, i.e. the relevant government agency (the operator) has the same liability as a private operator. This is particularly true with activities dealing with transportation of goods and services by air, land and sea. This area of activities has been predominantly controlled by the private sector, although government agencies are active in this area as well. Nevertheless, the liability and compensation principles applicable to government operators are the same as those applied to private operators. This similarity applies even in insurance requirements for conducting activities.

420. The protection of the interest of the injured parties may be one reason for uniformly applicable liability principles for both private and government operators. If there were a difference in liability rules based on the capacity of the operators, then Governments may have tried to minimize or avoid liability by subsidizing and sponsoring commercial activities normally conducted by private operators. Furthermore, since the activities are commercial in nature, there are no justifications for minimizing or removing the liability of government operators.

Multilateral agreements

421. The operator of activities causing extraterritorial damage or the insurer of the operator may be liable for damage. This appears to be particularly characteristic of conventions primarily concerned with commercial activities, such as the Additional Convention to the International Convention concerning the Damage of Passengers and Luggage by Rail (CIV) of February 1961 relating to the liability of railways for death of and personal injury to passengers [(with Protocol B) 1 July 1966 - Protocol 1, 31 December 1971]. Article 2 of the Convention provides:

"Article 2

Extent of liability

"1. The railway shall be liable for damage resulting from the death of, or personal injury or any other bodily or mental harm to, a passenger, caused by an accident arising out of the operation of the railway and happening while the passenger is in, entering or alighting from a train.

"The railway shall also be liable for damage to, or total or partial loss of any articles which the passenger who has sustained such an accident had either on him or with him as hand luggage, including any animals which he had with him.

"...

"...

"4. ...

"If the railway is not relieved of liability in accordance with the preceding sub-paragraph, the railway shall be wholly liable up to the limits laid down in this Convention, but without prejudice to any right of action which the railway may have against the third party.

"5. This Convention shall not affect any liability which may be incurred by the railway in cases not provided for under paragraph 1.

"6. For the purposes opf this Convention, the 'responsible railway' is that which, according to the list of lines provided for in Article 59 of CIV, operates the line on which the accident occurs. If, in accordance with the aforementioned list, there is joint operation of the line by two railways, each of them shall be liable."

The operators of railways may be private entities or government agencies. The Convention, however, does not appear to make any distinction between the operators as far as liability and compensation are concerned.

422. Similarly, the Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface provides for the liability of the operator of an aircraft causing injury to a person on the surface. The relevant articles of the Convention provide:

"Principles of liability

"Article 1

"1. Any person who suffers damage on the surface shall, upon proof only that the damage was caused by an aircraft in flight or by any person or thing falling therefrom, be entitled to compensation as provided by this Convention. Nevertheless there shall be no right to compensation if the damage is not a direct consequence of the incident giving rise thereto, or if the damage results from the mere fact of passage of the aircraft through the airspace in conformity with existing air traffic regulations.

"2. For the purpose of this Convention, an aircraft is considered to be in flight from the moment when power is applied for the purpose of actual take-off until the moment when the landing run ends. In the case of an aircraft lighter than air, the expression 'in flight' relates to the period from the moment when it becomes detached from the surface until it becomes again attached thereto.

"Article 2

"1. The liability for compensation contemplated by Article 1 of this Convention shall attach to the operator of the aircraft.

"2. (a) For the purposes of this Convention the term 'operator' shall mean the person who was making use of the aircraft at the time the damage was caused, provided that if control of the navigation of the aircraft was retained by the person from whom the right to make use of the aircraft was derived, whether directly or indirectly, that person shall be considered the operator.

"(b) A person shall be considered to be making use of an aircraft when he is using it personally or when his servants or agents are using the aircraft in the course of their employment, whether or not within the scope of their authority.

"3. The registered owner of the aircraft shall be presumed to be the operator and shall be liable as such unless, in the proceedings for the determination of his liability, he proves that some other person was the operator, and, in so far as legal procedures permit, takes appropriate measures to make that other person a party in the proceedings.

"Article 3

"If the person who was the operator at the time the damage was caused had not the exclusive right to use the aircraft for a period of more than fourteen days, dating from the moment when the right to use commenced, the person from whom such right was derived shall be liable jointly and severally with the operator, each of them being bound under the provisions and within the limits of liability of this Convention.

"Article 4

"If a person makes use of an aircraft without the consent of the person entitled to its navigational control, the latter, unless he proves that he has exercised due care to prevent such use, shall be jointly and severally liable with the unlawful user for damage giving a right to compensation under Article 1, each of them being bound under the provisions and within the limits of liability of this Convention.

"Article 7

"When two or more aircraft have collided or interfered with each other in flight and damage for which a right to compensation as contemplated in Article 1 results, or when two or more aircraft have jointly caused such damage, each of the aircraft concerned shall be considered to have caused the damage and the operator of each aircraft shall be liable, each of them being bound under the provisions and within the limits of liability of this Convention.

"Article 8

"The persons referred to in paragraph 3 of Article 2 and in Articles 3 and 4 shall be entitled to all defences which are available to an operator under the provisions of this Convention.

"Article 9

"Neither the operator, the owner, any person liable under Article 3 or Article 4, nor their respective servants or agents, shall be liable for damage on the surface caused by an aircraft in flight or any person or thing falling therefrom otherwise than as expressly provided in this Convention. This rule shall not apply to any such person who is guilty of a deliberate act or omission done with intent to cause damage."

423. The operators of aircraft may also be private or government entities. The operators enjoy limitation on liability. Article 11 of the Convention provides:

"CHAPTER II

"Extent of liability

"Article 11

"1. Subject to the provisions of Article 12, the liability for damage giving a right to compensation under Article I, for each aircraft and incident, in respect of all persons liable under this Convention, shall not exceed:

"(a) 500,000 francs for aircraft weighing 1,000 kilogrammes or less;

"(b) 500,000 francs plus 400 francs per kilogramme over 1,000 kilogrammes for aircraft weighing more than 1,000 but not exceeding 6,000 kilogrammes;

"(c) 2,500,000 francs plus 250 francs per kilogramme over 6,000 kilogrammes for aircraft weighing more than 6,000 but not exceeding 20,000 kilogrammes;

"(d) 6,000,000 francs plus 150 francs per kilogramme over 20,000 kilogrammes for aircraft weighing more than 20,000 but not exceeding 50,000 kilogrammes;

"(e) 10,500,000 francs plus 100 francs per kilogramme over 50,000 kilogrammes for aircraft weighing more than 50,000 kilogrammes.

"2. The liability in respect of loss of life or personal injury shall not exceed 500,000 francs per person killed or injured.

"3. 'Weight' means the maximum weight of the aircraft authorised by the certificate of airworthiness for take-off, excluding the effect of lifting gas when used.

"4. The sums mentioned in francs in this Article refer to a currency unit consisting of 65-1/2 milligrammes of gold of millesimal fineness 900. These sums may be converted into national currencies in round figures. Conversion of the sums into national currencies other than gold shall, in case of judicial proceedings, be made according to the gold value of such currencies at the date of the judgment, or, in cases covered by Article 14, at the date of the allocation."

424. The operators do not enjoy limitation on liability if the injury was due to their negligence. Article 12 provides:

"Article 12

"1. If the person who suffers damage proves that it was caused by a deliberate act or omission of the operator, his servants or agents, done with intent to cause damage, the liability of the operator shall be unlimited; provided that in the case of such act or omission of such servant or agent, it is also proved that he was acting in the course of his employment and within the scope of his authority.

"2. If a person wrongfully takes and makes use of an aircraft without the consent of the person entitled to use it, his liability shall be unlimited."

425. Article 16 of the same Convention provides for liability of the insurer of the aircraft under certain conditions:

"...

"5. Without prejudice to any right of direct action which he may have under the law governing the contract of insurance or guarantee, the person suffering damage may bring a direct action against the insurer or guarantor only in the following cases:

"(a) where the security is continued in force under the provisions of paragraph 1 (a) and (b) of this Article;

"(b) the bankruptcy of the operator.

"6. Excepting the defences specified in paragraph 1 of this Article, the insurer or other person providing security may not, with respect to direct actions brought by the person suffering damage based upon application of this Convention, avail himself of any grounds of nullity or any right of retroactive cancellation.

"7. The provisions of this Article shall not prejudice the question whether the insurer or guarantor has a right of recourse against any other person."

426. The above Conventions have stipulated limited liability. Both Conventions deal with transportation of goods and services across boundaries: an operation essential to the conditions of present civilization. Paragraph 1 of article 12 of the latter Convention is of interest because it lifts the limitation of liability of the operator if the operator is negligent. Under paragraph 2 of the same article, if a person wrongfully makes use of an aircraft without the consent of the person entitled to use it, his liability shall also be unlimited.

427. The Convention on the Liability of Operators of Nuclear Ships also provides for the liability of the operator of nuclear ships, who could be either a private or a public entity. Relevant articles of the Convention provide:

"Article II

"1. The operator of a nuclear ship shall be absolutely liable for any nuclear damage upon proof that such damage has been caused by a nuclear incident involving the nuclear fuel of, or radioactive products or waste produced in, such ship.

"2. Except as otherwise provided in this Convention no person other than the operator shall be liable for such nuclear damage.

"3. Nuclear damage suffered by the nuclear ship itself, its equipment, fuel or stores shall not be covered by the operator's liability as defined in this Convention.

"4. The operator shall not be liable with respect to nuclear incidents occurring before the nuclear fuel has been taken in charge by him or after the nuclear fuel or radioactive products or waste have been taken in charge by another person duly authorized by law and liable for any nuclear damage that may be caused by them.

"5. If the operator proves that the nuclear damage resulted wholly or partially from an act or omission done with intent to cause damage by the individual who suffered the damage, the competent courts may exonerate the operator wholly or partially from his liability to such individual.

"6. Notwithstanding the provisions of paragraph 1 of this Article, the operator shall have a right of recourse:

"(a) If the nuclear incident results from a personal act or omission done with intent to cause damage, in which event recourse shall lie against the individual who has acted, or omitted to act, with such intent;

"(b) If the nuclear incident occurred as a consequence of any wreck-raising operation, against the person or persons who carried out such operation without the authority of the operator or of the State having licensed the sunken ship or of the State in whose waters the wreck is situated;

"(c) If recourse is expressly provided for by contract.

"Article III

"1. The liability of the operator as regards one nuclear ship shall be limited to 1,500 million francs in respect of any one nuclear incident, notwithstanding that the nuclear incident may have resulted from any fault or privity of that operator; such limit shall include neither any interest nor costs awarded by a court in actions for compensation under this Convention."

"Article VII

"1. Where nuclear damage engages the liability of more than one operator and the damage attributable to each operator is not reasonably separable, the operators involved shall be jointly and severally liable for such damage. However, the liability of any one operator shall not exceed the limit laid down in Article III.

"2. In the case of a nuclear incident where the nuclear damage arises out of or results from nuclear fuel or radioactive products or waste of more than one nuclear ship of the same operator, that operator shall be liable in respect of each ship up to the limit laid down in Article III.

"3. In case of joint and several liability, and subject to the provisions of paragraph 1 of this Article:

"(a) Each operator shall have a right of contribution against the others in proportion to the fault attaching to each of them;

"(b) Where circumstances are such that the degree of fault cannot be apportioned, the total liability shall be borne in equal parts."

428. Similarly, the International Convention on Civil Liability for Oil Pollution Damage provides for liability of the owner of the ship at the time of an accident. There too the operator of a ship could be private or a government entity. Relevant articles of the Convention provide:

"ARTICLE III

"1. Except as provided in paragraphs 2 and 3 of this Article, the owner of a ship at the time of an incident, or where the incident consists of a series of occurrences at the time of the first such occurrence, shall be liable for any pollution damage caused by oil which has escaped or been discharged from the ship as a result of the incident.

"ARTICLE IV

"When oil has escaped or has been discharged from two or more ships, and pollution damage results therefrom, the owners of all the ships concerned, unless exonerated under Article III, shall be jointly and severally liable for all such damage which is not reasonably separable.

"ARTICLE V

"1. The owner of a ship shall be entitled to limit his liability under this Convention in respect of any one incident to an aggregate amount of 2,000 francs for each ton of the ship's tonnage. However, this aggregate amount shall not in any event exceed 210 million francs.

"2. If the incident occurred as a result of the actual fault or privity of the owner, he shall not be entitled to avail himself of the limitation provided in paragraph 1 of this Article."

429. Claims for compensation, under this Convention, could also be brought directly against the insurer of the operator. Article VII of the Convention provides:

"Article VII

" ...

" ...

"8. Any claim for compensation for pollution damage may be brought directly against the insurer or other person providing financial security for the owner's liability for pollution damage. In such case the defendant may, irrespective of the actual fault or privity of the owner, avail himself of the limits of liability prescribed in Article V, paragraph 1. He may further avail himself of the defences (other than the bankruptcy or winding up of the owner) which the owner himself would have been entitled to invoke. Furthermore, the defendant may avail himself of the defence that the pollution damage resulted from the wilful misconduct of the owner himself, but the defendant shall not avail himself of any other defence which he might have been entitled to invoke in proceedings brought by the owner against him. The defendant shall in any event have the right to require the owner to be joined in the proceedings."

430. The Preamble of the Convention relating to Civil Liability in the Field of Maritime Carriage of Nuclear Material explicitly states the desire of the contracting parties to hold the operator of a nuclear installation exclusively liable for damage caused as a result of any incident occurring during the maritime transportation of nuclear material. The relevant paragraph of the Preamble states:

"DESIROUS of ensuring that the operator of a nuclear installation will be exclusively liable for damage caused by a nuclear incident occurring in the course of maritime carriage of nuclear material".

431. The liability of the operator of a nuclear installation for the injuries it may cause has also been stipulated in article II of the Vienna Convention on Civil Liability for Nuclear Damage. This article provides:

"1. The operator of a nuclear installation shall be liable for nuclear damage upon proof that such damage has been caused by a nuclear incident -

"(a) in his nuclear installation; or

"(b) involving nuclear material coming from or originating in his nuclear installation, and occurring -

"(i) before liability with regard to nuclear incidents involving the nuclear material has been assumed, pursuant to the express terms of a contract in writing, by the operator of another nuclear installation;

"(ii) in the absence of such express terms, before the operator of another nuclear installation has taken charge of the nuclear material; or

"(iii) where the nuclear material is intended to be used in a nuclear reactor with which a means of transport is equipped for use as a source of power, whether for propulsion thereof or for any other purpose, before the person duly authorized to operate such reactor has taken charge of the nuclear material; but

"(iv) where the nuclear material has been sent to a person within the territory of a non-Contracting State, before it has been unloaded from the means of transport by which it has arrived in the territory of that non-Contracting State;

"(c) involving nuclear material sent to his nuclear installation, and occurring -

"(i) after liability with regard to nuclear incidents involving the nuclear material has been assumed by him, pursuant to the express terms of a contract in writing, from the operator of another nuclear installation;

"(ii) in the absence of such express terms, after he has taken charge of the nuclear material; or

"(iii) after he has taken charge of the nuclear material from a person operating a nuclear reactor with which a means of transport is equipped for use as a source of power, whether for propulsion thereof or for any other purpose; but

"(iv) where the nuclear material has, with the written consent of the operator, been sent from a person within the territory of a non-Contracting State, only after it has been loaded on the means of transport by which it is to be carried from the territory of that State;

provided that, if nuclear damage is caused by a nuclear incident occurring in a nuclear installation and involving nuclear material stored therein incidentally to the carriage of such material, the provisions of sub-paragraph (a) of this paragraph shall not apply where another operator or person is solely liable pursuant to the provisions of sub-paragraph (b) or (c) of this paragraph.

"2. The installation State may provide by legislation that, in accordance with such terms as may be specified therein, a carrier of nuclear material or a person handling radioactive waste may, at his request and with the consent of the operator concerned, be designated or recognized as operator in the place of that operator in respect of such nuclear material or radioactive waste respectively. In this case such carrier or such person shall be considered, for all the purposes of this Convention, as an operator of a nuclear installation situated within the territory of that State.

"3. (a) Where nuclear damage engages the liability of more than one operator the operators involved shall, in so far as the damage attributable to each operator is not reasonably separable, be jointly and severally liable.

"(b) Where a nuclear incident occurs in the course of carriage of nuclear material, either in one and the same means of transport, or, in the case of storage incidental to the carriage, in one and the same nuclear installation, and causes nuclear damage which engages the liability of more than one operator, the total liability shall not exceed the highest amount applicable with respect to any one of them pursuant to Article V.

"(c) In neither of the cases referred to in sub-paragraphs (a) and (b) of this paragraph shall the liability of any one operator exceed the amount applicable with respect to him pursuant to Article V.

"4. Subject to the provisions of paragraph 3 of this Article, where several nuclear installations of one and the same operator are involved in one nuclear incident, such operator shall be liable in respect of each nuclear installation involved up to the amount applicable with respect to him pursuant to Article V.

"5. Except as otherwise provided in this Convention, no person other than the operator shall be liable for nuclear damage. This, however, shall not affect the application of any international convention in the field of transport in force or open for signature, ratification or accession at the date on which this Convention is opened for signature.

"6. No person shall be liable for any loss or damage which is not nuclear damage pursuant to sub-paragraph (k) of paragraph 1 of Article I but which could have been included as such pursuant to sub-paragraph (k) (ii) of that paragraph.

"7. Direct action shall lie against the person furnishing financial security pursuant to Article VII, if the law of the competent court so provides."

432. The operator's liability, under article IV of the Convention, is absolute. This article provides:

"1. The liability of the operator for nuclear damage under this Convention shall be absolute.

"...

"6. ...

"...

Nothing in this Convention shall affect -

"(a) the liability of any individual for nuclear damage for which the operator, by virtue of paragraph 3 or 5 of this Article, is not liable under this Convention and which that individual caused by an act or omission done with intent to cause damage; or

"(b) the liability outside this Convention of the operator for nuclear damage for which, by virtue of sub-paragraph (b) of paragraph 5 of this Article, he is not liable under this Convention."

433. The installation State may limit the operator's liability but not to less than $US 5 million for any one nuclear incident. Article V provides:

"1. The liability of the operator may be limited by the Installation State not less than US $5 million for any one nuclear incident.

"2. Any limits of liability which may be established pursuant to this Article shall not include any interest or costs awarded by a court in actions for compensation of nuclear damage.

"3. The United States dollar referred to in this Convention is a unit of account equivalent to the value of the United States dollar in terms of gold on 29 April 1963, that is to say $US 35 per one troy ounce of fine gold.

"4. The sum mentioned in paragrap 6 of Article IV and in paragraph 1 of this Article may be converted into national currency in round figures."

434. The Convention on Third Party Liability in the Field of Nuclear Energy provides for operator's liability. Relevant articles of the Convention provide:

"Article 3

"The operator of a nuclear installation shall be liable, in accordance with this Convention, for:

"(a) damage to or loss of life of any person; and

"(b) damage to or loss of any property other than

"(i) property held by the operator or in his custody or under his control in connection with, and at the site of such installation, and

"(ii) in the cases within Article 4, the means of transport upon which the nuclear substances involved were at the time of the nuclear incident,

Upon proof that such damage or loss (hereinafter referred to as 'damage') was caused by a nuclear incident involving either nuclear fuel or radioactive products or waste in, or nuclear substances coming from such installation, except as otherwise provided for in Article 4."

"Article 4

"In the case of carriage of nuclear substances, including storage incidental thereto, without prejudice to Article 2:

"(a) The operator of a nuclear installation shall be liable, in accordance with this Convention, for damage upon proof that it was caused by a nuclear incident outside that installation and involving nuclear substances in the course of carriage therefrom, only if the incident occurs

"(i) before the nuclear substances involved have been taken in charge by another operator of a nuclear installation situated in the territory of a Contracting Party; or

"(ii) before the nuclear substances involved have been unloaded from the means of transport by which they have arrived in the territory of a non-contracting state, if they are consigned to a person within the territory of that state.

"(b) The operator referred to in paragraph (a) (i) of this article shall, from his taking charge of the nuclear substances, be the operator liable in accordance with this Convention for damage caused by a nuclear incident occurring thereafter and involving the nuclear substances.

"(c) Where nuclear substances are sent from outside the territory of the Contracting Parties to a nuclear installation situated in such territory, with the approval of the operator of that installation, he shall be liable, in accordance with this Convention, for damage caused by a nuclear incident occurring after the nuclear substances involved have been loaded on the means of transport by which they are to be carried from the territory of the non-contracting State.

"(d) The operator liable in accordance with this Convention shall provide the carrier with a certificate issued by or on behalf of the insurer or other financial guarantor furnishing the security required pursuant to Article 10. The certificate shall state the name and address of that operator and the amount, type and duration of the security, and these statements may not be disputed by the person by whom or on whose behalf the certificate was issued. The certificate shall also indicate the nuclear substances and the carriage in respect of which the security applies and shall include a statement by the competent public authority that the person named is an operator within he meaning of this Convention.

"(e) A Contracting Party may provide by legislation that, under such terms as may be contained therein and upon fulfilment of the requirements of Article 10 (a), a carrier may, at his request and with the consent of an operator of a nuclear installation situated in its territory, by decision of the competent public authority, be liable in accordance with this Convention in place of that operator. In such case for all the purposes of this Convention the carrier shall be considered, in respect of nuclear incidents

occurring in the course of carriage of nuclear substances, as an operator of a nuclear installation on the territory of the Contracting Party whose legislation so provides.

"Article 5

"(a) If the nuclear fuel or radioactive products or waste involved in a nuclear incident have been in more than one nuclear installation and are in a nuclear installation at the time damage is caused, no operator of any nuclear installation in which they have previously been shall be liable for the damage. If the nuclear fuel or radioactive products or waste involved in a nuclear incident have been in more than one nuclear installation and are not in a nuclear installation at the time damage is caused, no person other than the operator of the last nuclear installation in which they were before the damage was caused or an operator who has subsequently taken them in charge shall be liable for the damage.

"(b) If damage gives rise to liability of more than one operator in accordance with this Convention, the liability of those operators shall be joint and several: provided that where such liability arises as a result of damage caused by a nuclear incident involving nuclear substances in the course of carriage, the maximum total amount for which such operators shall be liable shall be the highest amount established with respect to any of them pursuant to Article 7 and provided that in no case shall any one operator be required, in respect of a nuclear incident, to pay more than the amount established with respect to him pursuant to Article 7.

"Article 6

"(a) The right to compensation for damage caused by a nuclear incident may be exercised only against an operator liable for the damage in accordance with this Convention, or, if a direct right of action against the insurer or other financial guarantor furnishing the security required pursuant to Article 10 is given by national law, against the insurer or other financial guarantor.

"(b) No other person shall be liable for damage caused by a nuclear incident, but this provision shall not affect the application of any international agreement in the field of transport in force or open for signature, ratification or accession at the date of this Convention.

"(c) Any person who is liable for damage caused by a nuclear incident under any international agreement referred to in paragraph (b) of this article or under any legislation of a non-contracting state shall have a right of recourse, within the limitation of the amount of liability established pursuant to Article 7 against the operator liable for that damage in accordance with this Convention.

"(d) Where a nuclear incident occurs in the territory of a non-contracting state or damage is suffered in such territory, any person who has his principal place of business in the territory of a Contracting Party or

who is the servant of such a person shall have a right of recourse for any sums which he is liable to pay in respect of such incident or damage, within the limitation of liability established pursuant to Article 7, against the operator, who, but for the provisions of Article 2, would have been liable.

"(e) The Council of the Organisation may decide that carriers whose principal place of business is in the territory of a non-contracting state should benefit from the provisions of paragraph (d) of this article. In taking its decision, the Council shall give due consideration to the general provisions on third party liability in the field of nuclear energy in such non-contracting state and the extent to which these provisions are available to the benefit of nationals of, and persons whose principal place of business is in the territory of, the Contracting Parties.

"(f) The operator shall have a right of recourse only

"(i) if the damage caused by a nuclear incident results from an act or omission done with intent to cause damage against the individual acting or omitting to act with such intent;

"(ii) if and to the extent that it is so provided expressly by contract;

"(iii) if and to the extent that he is liable pursuant to Article 7(e) for an amount over and above that established with respect to him pursuant to Article 7(b), in respect of a nuclear incident occurring in the course of transit of nuclear substances carried out without his consent, against the carrier of the nuclear substances, except where such transit is for the purpose of saving or attempting to save life or property or is caused by circumstances beyond the control of such carrier.

"(g) If the operator has a right of recourse to any extent pursuant to paragraph (f) of this article against any person, that person shall not, to that extent, have a right of recourse against the operator under paragraphs (c) and (d) of this article.

"(h) Where provisions of national health insurance, social security, workmen's compensation or occupational disease compensation systems include compensation for damage caused by a nuclear incident, rights of beneficiaries of such systems and rights of recourse by virtue of such systems shall be determined by the law of the Contracting Party having established such systems."

435. The operator's liability is formulated more generally in the Convention on the Protection of the Environment between Denmark, Finland, Norway and Sweden, in which access is provided for the injured party to local Courts or the Administrative Authority of the State in whose territory the act causing damage has occurred. Article 3 of the Convention provides:

"Article 3

"Any person who is affected or may be affected by a nuisance caused by environmentally harmful activities in another Contracting State shall have the right to bring before the appropriate Court or Administrative Authority of that State the question of the permissibility of such activities, including the question of measures to prevent damage, and to appeal against the decision of the Court or the Administrative Authority to the same extent and on the same terms as a legal entity of the State in which the activities are being carried out."

"The provisions of the first paragraph of this Article shall be equally applicable in the case of proceedings concerning compensation for damage caused by environmentally harmful activities. The question of compensation shall not be judged by rules which are less favourable to the injured party than the rules of compensation of the State in which the activities are being carried out."

436. The Protocol attached to the Convention further provides:

"The right established in Article 3 for anyone who suffers injury as a result of environmentally harmful activities in a neighbouring State to institute proceedings for compensation before a court or administrative authority of that State shall, in principle, be regarded as including the right to demand the purchase of his real property."

437. The Draft Convention on Liability and Compensation in Connexion with the Carriage of Noxious and Hazardous Substances by Sea provides in Articles 3 and 7, for the liability of the owner of the ship carrying hazardous substances as well as of the shipper if the injured person has been unable to obtain from the owner full compensation for the damage under the Convention. Paragraph 1 of draft article 3 provides:

"1. Except as provided in paragraphs 2 and 3 the owner at the time of an incident of a ship carrying hazardous substances as cargo shall be liable for damage caused by any such substance during its carriage by sea, provided that if an incident consists of a series of occurrences having the same origin the liability shall attach to the owner at the time of the first of such occurrences."

438. And Paragraph 1 of draft article 7 provides:

"1. The shipper of a hazardous substance shall be liable to pay compensation to any person suffering damage caused by that substance during its carriage by sea if such person has been unable to obtain from the owner full compensation for the damage under this Convention:

"(a) because the damage exceeds the owner's liability under this Convention as limited in accordance with Article 6;

"(b) because the owner liable for the damage under Article 3 is financially incapable of meeting his obligations in full; an owner being treated as financially incapable of meeting his obligations if the person suffering the damage has been unable to obtain full satisfaction of the amount of compensation due under this Convention after having taken all reasonable steps to pursue the legal remedies available to him."

Bilateral agreements

439. The liability of the operator of the activity causing extraterritorial injury has been incorporated in some bilateral agreements. Previously mentioned agreements between Norway and the Federal Republic of Germany 70/ and also between Norway and the United Kingdom 71/ concerning transmission of petroleum by pipeline from the Ekofisk Field explicitly state that the licencees are liable for pollution damage, including the costs of preventive and remedial action. Article 12 of the former treaty provides:

> "Liability for pollution damage, including the costs of preventive and remedial action, shall be governed in accordance with the provisions of article 4. Licences shall contain provisions concerning the liability of the licensees and their obligations to insure against or to furnish security or guarantees in respect of possible pollution damage." [Emphasis added.]

440. And article 11 of the Agreement between the United Kingdom and Norway on the transmission of petroleum by pipeline provides:

> "Liability for pollution damage including the costs of preventive and remedial action, shall be governed in accordance with the provisions of Article 4. The licence or licences may contain conditions concerning the liability of the licensees and their obligations to insure against or to furnish security or guarantees in respect of possible pollution damage." [Emphasis added.]

441. The pipeline is subject to Norwegian law for the purposes of civil and criminal jurisdiction as well as for enforcement. Article 4 of the Agreement provides:

> "The pipeline company shall be subject to Norwegian law and jurisdiction as regards civil and criminal proceedings, forum and enforcement. This shall also apply in relation to the pipeline and incidents pertaining thereto; it being understood, however, that this shall not exclude the concurrent jurisdiction of the United Kingdom courts and the application of United Kingdom law subject to the rules of United Kingdom law governing the conflict of laws."

70/ Agreement between the Federal Republic of Germany and the Kingdom of Norway Relating to the Transmission of Petroleum by Pipeline from the Ekofisk Field and Neighbouring Areas to the Federal Republic of Germany (16 January 1979).

71/ Agreement between the Government of the United Kingdom of Great Britain and the Government of the Kingdom of Norway Relating to the Transmission of Petroleum by Pipeline from the Ekofisk Field and Neighbouring Areas to the United Kingdom (22 May 1973).

442. Operator liability has been incorporated in an agreement between Finland and Sweden regarding their shared rivers. 72/ Chapter 7 of the agreement dealing with compensation refers, in article 1, to the liability of any person who is granted the right to use property belonging to a third party, for injuries resulting from such use. Article 1 of chapter 7 of the Agreement provides:

> "Any person who is granted the right under this Agreement to use property belonging to a third party, to use water power belonging to a third party or to take measures which otherwise cause damage or inconvenience to property belonging to a third party shall be liable to pay compensation for the property used or for the loss, damage or inconvenience caused.
>
> "Save as otherwise provided, compensation shall be fixed at the same time that permission is granted for the measure in question."

443. Articles 26 and 27 of a German-Danish frontier water treaty 73/ provide for liability not of the operator of the activity, but of the persons who benefit from the activity. Under these articles a joint commission may decide on certain measures regarding the joint water. Those who have suffered injuries from the new measures have the right to full compensation from those who benefit from the measures. Also the new expenses of upkeep, if increased by the new measure, should be paid by those who are benefiting from them. Articles 26 and 27 of the Agreement provide:

> "Article 26.
>
> "Compensation for damage caused by regularisation.
>
> "Any person who suffers loss or damage in consequence of the regularisation or of the alteration in the condition of the watercourse occasioned by such regularisation has the right to claim full compensation from the person who benefits by the work in question. The matter shall be decided by the Frontier Water Commission.
>
> "The riparian proprietors must permit, subject to compensation, the erection at or in the watercourse of subsidiary works necessary to carry out the regularisation of a river bed, the deposit of earth, stones, gravel, sand, wood, etc., on the land on the banks, the transport to and fro of such materials and the storing and transport to and fro of building materials, and must also grant regular right of access to the workmen and inspectors.

72/ Agreement between Finland and Sweden concerning frontier rivers (15 December 1971).

73/ Agreement for the Settlement of Questions Relating to Watercourses and Dikes on the German-Danish Frontier (10 April 1922).

"These provisions are also applicable to land situated behind the riparian land and to the proprietors thereof.

"In the absence of agreement, the Frontier Water Commission shall determine the amount of compensation.

"Article 27.

"Liability for upkeep after regularisation.

"If the cost of upkeep is increased by the regularisation of a watercourse, the increase shall be apportioned among all the proprietors to whom the regularisation is of use or advantage, regardless of the fact whether they previously shared in the cost of upkeep or not."

Judicial decisions and State practice other than agreements

444. Judicial decisions and official correspondence surveyed in this study do not present a clear picture on the liability of the operator. The sources have not indicated any instances where the operator has been held to be solely liable to pay compensation for injuries resulting from the operator's activities. In some incidents private operators have, of course, voluntarily paid compensation and taken unilateral action to minimize or prevent injuries without admitting liability. It is obviously difficult to determine the actual reason for the unilateral and voluntary action. But it would not be entirely correct to assume that this action was taken solely on "moral" grounds. One should not underestimate pressure from the home Government, public opinion, or the necessity of having a relaxed atmosphere for doing business. All these pressures lead to creation of an expectation which is stronger than a mere moral obligation.

445. In the Cherry Point oil spill, the private operator unilaterally accepted to pay for the clean-up costs, which resulted from the spilling of oil by a Liberian tanker while unloading at the Cherry Point refinery. The tanker accidentally spilled some 12,000 gallons of crude oil, a good deal of which fouled about five miles of beaches in British Colombia, Canada. The spill was relatively small, but it had major political repercussions. The refinery and authorities on both sides of the border took prompt action to contain it and minimize the damage. The damage to the Canadian shorelines and waters was consequently less than might otherwise have been. 74/ The private operator, the Atlantic Richfield Company, paid for the clean-up operations.

446. In the Peyton Packing Company and Casuco Company correspondence, the companies took unilateral measures to remedy injury being caused extraterritorially by their activities. Likewise, the operator of the Consolidated Mining and Smelting Company of Canada, the operator in the Trail Smelter dispute, took unilateral action to remedy injury arising from its activities to the State of Washington. However, in

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74/ Canadian Yearbook of International Law, vol. 11, pp. 333-334.

the oil exploitation by a private operator in Canada, near the Alaskan border, the Canadian Government agreed to be held responsible for possible injuries to the United States if the guarantees of the private operator proved to be insufficient. 75/

C. State liability

447. Past trends demonstrate that States have been held liable for injuries caused to other States and their subjects as a result of activities occurring within their territorial jurisdiction or control. Even treaties imposing liabilities on the operators of activities have not in all cases relinquished state liability.

Multilateral agreements

448. In some multilateral treaties States have agreed to be held liable for injuries caused by activities occurring within their territorial jurisdiction or control. Some conventions regulating activities undertaken mostly by private operators impose certain responsibilities upon the State to make sure that their operators abide by those regulations. Once the State fails to do so, it appears to be held liable for the injuries the operator causes. For example, paragraph 2 of article III of the Convention on the Liability of Operators of Nuclear Ships requires the operator to maintain insurance or other financial securities covering his liability for nuclear damage in such forms as the licensing State specifies. Furthermore, the licensing State has to ensure the payment of claims for compensation for nuclear damage established against the operator by providing the necessary funds up to the limit laid down in paragraph 1 of article III to the extent that the yield of the insurance or the financial securities is inadequate to satisfy such claims. Hence the licensing State is obliged under the Convention to ensure that the insurance of the operator or the owner of the nuclear ship satisfies the requirements of the Convention. Otherwise the State itself is liable and has to pay compensation. In addition, article XV of the Convention obligates the State to take all necessary measures to prevent a nuclear ship flying its flag from operating without a licence. If a State fails to do so, and a nuclear ship flying its flag causes injury to others, the flag State is considered to be the licensing State, and it will be held liable for compensation to victims in accordance with the obligations of article III. Article XV of the Convention provides:

"Article XV

"1. Each Contracting State undertakes to take all measures necessary to prevent a nuclear ship flying its flag from being operated without a licence or authority granted by it.

75/ International Canada, vol. 7 (1976), p. 84.

"2. In the event of nuclear damage involving the nuclear fuel of, or radioactive products or waste produced in, a nuclear ship flying the flag of a Contracting State, the operation of which was not at the time of the nuclear incident licensed or authorized by such Contracting State, the owner of the nuclear ship at the time of the nuclear incident shall be deemed to be the operator of the nuclear ship for all the purposes of this Convention, except that his liability shall not be limited in amount.

"3. In such an event, the Contracting State whose flag the nuclear ship flies shall be deemed to be the licensing State for all the purposes of this Convention and shall, in particular, be liable for compensation for victims in accordance with the obligations imposed on a licensing State by Article III and up to the limit laid down therein.

"4. Each Contracting State undertakes not to grant a licence or other authority to operate a nuclear ship flying the flag of another State. However, nothing in this paragraph shall prevent a Contracting State from implementing the requirements of its national law concerning the operation of a nuclear ship within its internal waters and territorial sea."

449. For activities involving primarily States, the States themselves have accepted liability. Such is the obligation under the Convention on International Liability for Damage Caused by Space Objects. Article II of the Convention provides for the absolute liability of the launching State for damage caused by its space object:

"Article II

"A launching State shall be absolutely liable to pay compensation for damage caused by its space object on the surface of the earth or to aircraft in flight.

"..."

450. When two space objects are involved in an accident with one another and cause injury to a third State or its subjects, both launching States are liable to the third State. Article IV provides:

"Article IV

"1. In the event of damage being caused elsewhere than on the surface of the earth to a space object of one launching State or to persons or property on board such a space object by a space object of another launching State, and of damage thereby being caused to a third State or to its natural or juridical persons, the first two States shall be jointly and severally liable to the third State, to the extent indicated by the following:

"(a) If the damage has been caused to the third State on the surface of the earth or to aircraft in flight, their liability to the third State shall be absolute;

"(b) If the damage has been caused to a space object of the third State or to persons or property on board that space object elsewhere then on the surface of the earth, their liability to the third State shall be based on the fault of either of the first two States or on the fault of persons for whom either is responsible.

"2. In all cases of joint and several liability referred to in paragraph 1 of this article, the burden of compensation for the damage shall be apportioned between the first two States in accordance with the extent to which they were at fault, if the extent of the fault of each of those States cannot be established, the burden of compensation shall be apportioned equally between them. Such apportionment shall be without prejudice to the right of the third State to seek the entire compensation due under this Convention from any or all of the launching States which are jointly and severally liable."

451. Also, when two or more States jointly launch a space object, they both are jointly and severally liable for any damage the space object may cause. Article V of the Convention provides:

"Article V

"1. Whenever two or more States jointly launch a space object, they shall be jointly and severally liable for any damage caused.

"2. A launching State which has paid compensation for damage shall have the right to present a claim for indemnification to other participants in the joint launching. The participants in a joint launching may conclude agreements regarding the apportioning among themselves of the financial obligation in respect of which they are jointly and severally liable. Such agreements shall be without prejudice to the right of a State sustaining damage to seek the entire compensation due under this Convention from any or all of the launching States which are jointly and severally liable.

"3. A State from whose territory or facility a space object is launched shall be regarded as a participant in a joint launching."

452. When the launching entity is an international organization, it has the same liability as a launching State. Article XXII of the Convention provides:

"Article XXII

"1. In this Convention, with the exception of articles XXIV to XXVII, reference to States shall be deemed to apply to any international intergovernmental organization which conducts space activities if the organization declares its acceptance of the rights and obligations provided for in this Convention and if a majority of the States members of the organization are States Parties to this Convention and to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space including the Moon and Other Celestial Bodies.

"2. States members of any such organization which are States Parties to this Convention shall take all appropriate steps to ensure that the organization makes a declaration in accordance with the preceding paragraph."

453. In addition to the launching international organization, its members who are parties to this Convention are also jointly and severally liable. Paragraphs 3 and 4 of article XXII of the Convention provide:

"3. If an international intergovernmental organization is liable for damage by virtue of the provisions of this Convention, that organization and those of its members which are States Parties to this Convention shall be jointly and severally liable; provided, however, that:

"(a) Any claim for compensation in respect of such damage shall be first presented to the organization;

"(b) Only where the organization has not paid, within a period of six months, any sum agreed or determined to be due as compensation for such damage, may the claimant State invoke the liability of the members which are States Parties to this Convention for the payment of that sum.

"4. Any claim, pursuant to the provision of this Convention, for compensation in respect of damage caused to an organization which has made a declaration in accordance with paragraph 1 of this article shall be presented by a State member of the organization which is a State Party to this Convention."

454. Finally, the Convention on the Law of the Sea provides in article 139 that States parties to the Convention shall ensure that activities in the "Area", whether carried out by the State or its subjects, are in conformity with the Convention. When a State party fails to carry out its obligation it will be liable for damage. The same liability is imposed upon an international organization for activities in the "Area". In this case, States members of international organizations acting together bear joint and several liability. States members of international organizations involved in activities in the "Area" must ensure the implementation of the requirements by the Convention with respect to those international organizations. Article 139 of the Convention provides:

"Article 139

"Responsibility to ensure compliance and liability for damage

"1. States Parties shall have the responsibility to ensure that activities in the Area, whether carried out by States Parties, or state enterprises or natural or juridical persons which possess the nationality of States Parties or are effectively controlled by them or their nationals, shall be carried out in conformity with this Part. The same responsibility applies to international organizations for activities in the Area carried out by such organizations.

"2. Without prejudice to the rules of international law and Annex III, article 22, damage caused by the failure of a State Party or international organization to carry out its responsibilities under this Part shall entail liability; States Parties or international organizations acting together shall bear joint and several liability. A State Party shall not however be liable for damage caused by any failure to comply with this Part by a person whom it has sponsored under article 153, paragraph 2 (b), if the State Party has taken all necessary and appropriate measures to secure effective compliance under article 153, paragraph 4, and Annex III, article 4, paragraph 3.

"3. States Parties that are members of international organizations shall take appropriate measures to ensure the implementation of this article with respect to such organizations."

455. Similarly, article 263 of the Convention provides for liability of States and international organizations, for damage caused by pollution of the marine environment arising out of marine scientific research undertaken by them or on their behalf. Thus States and international organizations are liable for the measures they take which violate the Convention in respect of marine scientific research undertaken by other States, their subjects and international organizations. And if those measures cause injury they must pay compensation for damage. Article 263 of the Convention provides:

"Article 263

"Responsibility and liability

"1. States and competent international organizations shall be responsible for ensuring that marine scientific research, whether undertaken by them or on their behalf, is conducted in accordance with this Convention.

"2. States and competent international organizations shall be responsible and liable for the measures they take in contravention of this Convention in respect of marine scientific research conducted by other States, their natural or juridical persons or by competent international organizations, and shall provide compensation for damage resulting from such measures.

"3. States and competent international organizations shall be responsible and liable pursuant to article 235 for damage caused by pollution of the marine environment arising out of marine scientific research undertaken by them or on their behalf."

Bilateral agreements

456. One bilateral agreement refers to State liability for injuries caused by fault or by deliberate destructive activities. The agreement between Poland and the Soviet Union regarding their joint frontier 76/ provides, in article 14, for the liability of a contracting party causing material damage as a result of failure to keep the frontier river in proper order and to prevent deliberate destruction of the banks of the frontier rivers and lakes. Article 14 of chapter I of the Agreement provides:

> "1. The Contracting Parties shall see that frontier waters are kept in proper order. They shall also take appropriate steps to prevent deliberate destruction of the banks of frontier rivers and lakes.
>
> "2. If, through the fault of one Contracting Party material damage is caused to the other Contracting Party as a result of failure to carry out the provisions of paragraph 1 of this article, compensation for such damage shall be paid by the Party responsible therefor."

457. Yugoslavia and Hungary have also recognized each other's liability for causing damage as a result of their failure to respect the requirements of article 5 of their 1957 Agreement. 77/ This article provides:

> "It shall be prohibited to ret flax and hemp in the frontier waters and to discharge untreated waste waters and other substances harmful to aquatic wildlife, irrespective of the manner in which and the distance from which such substances reach the frontier waters. A Contracting Party failing to respect this provision shall make compensation for any damage caused."

458. Hunary and the Soviet Union in an agreement regarding their joint frontier 78/ provide, in article 14, for liability of the contracting party which has caused extraterritorial injuries because of its failure to keep the frontier in proper order as required in article 14 of the the treaty. This article provides:

76/ Agreement between the Government of the Polish Republic and the Government of the Union of Soviet Socialist Republics concerning the régime of the Soviet-Polish State frontier (8 July 1948).

77/ Agreement between the Government of the Federal People's Republic of Yugoslavia and the Government of the Hungarian People's Republic concerning fishing in frontier waters (25 May 1957).

78/ Treaty between the Government of the Union of Soviet Socialist Republics and the Government of the Hungarian People's Republic concerning the régime of the Soviet-Hungarian State frontier and Final Protocol (24 February 1950).

"Article 14. 1. The Contracting Parties shall ensure that the frontier waters are kept in proper order. They shall also take steps to prevent deliberate damage to the banks of frontier rivers.

"2. Where one Contracting Party occasions material damage to the other Contracting Party by failing to comply with the provisions of paragraph 1 of this article, compensation for such damage shall be paid by the Party responsible therefor."

459. The Netherlands and the Federal Republic of Germany have recognized State liability for injuries caused in violation of certain provisions of their treaty. 79/ These provisions primarily refer to procedural steps which should be taken when an objection is raised regarding certain activities by the other contracting party. The importance attached to the procedural aspects of evaluating an activity involving extraterritorial injuries is quite explicit in this treaty. It appears that a unilateral decision in carrying out an activity which may cause extraterritorial injuries may lead to a greater degree of liability for damage than in the case of activities preceded by some recommended procedural steps such as consultation, etc. Of course, consultation and other procedural steps should be taken only when there is an objection to undertaking a particular activity. Article 63 of the agreement provides:

"1. If one of the Contracting Parties, notwithstanding the objections raised by the other Party under the terms of article 61, acts in violation of its obligations under this chapter or arising under any of the special agreements to be concluded as provided in article 59, thereby causing damage within the territory of the other Contracting Party, it shall be liable for damages.

"2. Liability for damages shall arise in respect only of such damage as was sustained after the objections were raised."

460. State liability has also been provided in bilateral agreements for extraterritorial injuries to one contracting party resulting from any kind of activities. Finland and the Soviet Union, for example, have agreed in article 5 of a treaty 80/ that the contracting party who causes injury in the territory of the other party through activities in its own territory should be liable and pay compensation. Article 5 of the Agreement provides:

79/ Treaty between the Kingdom of the Netherlands and the Federal Republic of Germany concerning the course of the common frontier, the boundary waters, real property situated near the frontier, traffic crossing the frontier on land and via inland waters, and other frontier questions (Frontier Treaty) (8 April 1960).

80/ Agreement between the Republic of Finland and the Union of Soviet Socialist Republics concerning frontier watercourses (24 April 1964).

"Where the execution of certain measures by one Contracting Party causes loss or damage in the territory of the other Contracting Party, the Contracting Party permitting such measures in its territory shall be liable to make reparation to the Party suffering the loss or damage. Each Contracting Party shall ensure that reparation for the loss or damage is made to nationals, organizations and institutions of its own country.

"The Contracting Parties may agree separately to make reparation for any loss or damage caused by the measures referred to in this article by granting the Party suffering the loss or damage certain privileges in the watercourses of the other Party."

461. An explicit expression of general State liability for extraterritorial injuries may be found in the Treaty between Uruguay and Argentina regarding the La Plata River. 81/ This agreement provides for the liability of each contracting State in whose territory polluting activity occurs and causes detriment to the other contracting party. The language of the Treaty is clear on State liability regardless of whether the polluting activity is carried out by the State or by private entities. Article 51 of the Treaty provides:

"Each Party shall be liable to the other for detriment suffered as a consequence of pollution caused by their operations, or by those of physical or corporate persons domiciled on their soil."

462. Article 2, paragraph (c) of the Agreement between Finland and Norway regarding the transfer of water from the course of a joint river (the Näätämo) 82/ may also be included among those referring to State liability. However, a difference may be noted between this Agreement and those mentioned above. This Agreement deals with certain agreed changes to be made in the course of a joint river which may be injurious to one party. Therefore, the party which benefits more from such changes agrees to compensate the injuries the other party may suffer. But the other agreements mentioned above dealt with activities which either contracting party might undertake with or without prior consultation, and which may be harmful to the other party. Article 2, paragraph (c) of the Agreement between Finland and Norway provides:

"(c) The Government of Norway shall compensate the Government of Finland for any loss of water power which may be caused as a result of this Agreement and for the cost of the clearing operations referred to under (b) above, by an over-all payment which has been fixed at 15,000 Norwegian Kronor."

81/ Treaty of the La Plata River and Its Maritime Limits between the Republic of Uruguay and the Republic of Argentina (19 November 1973).

82/ Agreement betweeen the Governments of Finland and Norway on the Transfer from the Course of the Näätämo (Neiden) River to the Course of the Gandvik River of Water from the Garsjöen, Kjerringvatr and Förstevannene Lakes (25 April 1951).

463. A State liability concept similar to that contained in the Agreement between Finland and Norway mentioned above, appears in article 1 of an agreement between the Soviet Union and Finland of 1959, covering the regulation of Lake Inari. 83/ Article 1 provides for a lump sum payment of 75 million Finnish markkaa for any loss and damage which may be caused to land, waters, structures or other property belonging to the State, communes and private persons and bodies of Finland as a result of implementing certain agreed activities. Consequently, and in consideration of the above requirement, the Soviet Union is exonerated from all responsibility towards Finland and its subjects in relation to these activities. Article 1 states:

> "In consideration of such loss and damage as have been or may be caused to the lands, waters, structures or other property of any kind belonging to the State, communes and private persons and bodies of Finland as a result of the regulation of Lake Inari under the Agreement of 24 April 1947 and the Agreement concluded this day, and as payment for the works which have been and are to be carried out by the Finnish Ministry under the Regulations referred to in article 2 of the said Agreements, the Government of the Soviet Union has paid to the Government of Finland a lump sum of seventy-five million (75,000,000) Finnish markkaa.
>
> "The Government of the Soviet Union is consequently exonerated of all responsibility to the State, communes, individuals and corporate bodies of Finland for the loss and damage referred to in the first paragraph of this article and for the works which have been and are to be carried out by the Finnish Ministry under the Regulations referred to in article 2 of the said Agreements. The Finnish Ministry assumes all such responsibility to the said authorities, persons and bodies."

464. A different form of State liability may also be observed in a convention between France and Spain regarding mutual fire emergency assistance. 84/ This Convention provides for mutual assistance between the two contracting parties in case of fire emergencies. It exonerates the party that was called upon for assistance from liability for any damage that may be caused to third parties. The liability for such damage, according to the Convention, lies with the party requesting the assistance. As for the damage that may be caused to third parties

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83/ Additional Protocol between the Union of Soviet Socialist Republics and Finland concerning compensation for loss and damage and for the work to be carried out by Finland in connection with the implementation of the Agreement of 29 April 1959 between the Government of the Union of Soviet Socialist Republics, the Government of Finland and the Government of Norway concerning the regulation of Lake Inari by means of the Kaitakoski hydroelectric power station and dam (29 April 1959).

84/ Convention of Mutual Assistance between French and Spanish Fire Emergencies Services (8 February 1973).

by fire emergency services while on their way to or from the place where they were employed, the authorities in whose territory the injury has occurred will be liable for damage. Also, if the emergency assistance causes injury or death to the service personnel, the party to which the personnel belongs shall waive any claim against the other party. Article VI of the Convention, dealing with the payment of compensation consequent upon accidents, provides:

> "1. In the event of the death of or injury to emergency personnel, the party to which the personnel in question belong shall waive any claim against the other party.
>
> "2. If the emergency services called in to assist cause damage to third parties at the place where they are employed, such damage being attributable to the emergency operations, the damage shall be the responsibility of the party which requested the assistance, even if it results from a faulty action or technical error.
>
> "3. If the emergency services called in to assist cause damage to third parties while on the way to or from the place where they are employed, such damage shall be the responsibility of the authorities in whose territory it was caused."

465. Article 5 of the Agreement between Austria and the Federal Republic of Germany regarding he operation of the Salzburg airport 85/ also provides for the liability of the Federal Republic of Germany if injury to third parties occurs in its territory as a result of unlawful conduct by Austrian airport officials. The Austrian Government is, of course, obliged to compensate the Federal Republic of Germany for its discharge of liability arising from the claim. This article does not apply to injuries that may be sustained by Austrian nationals. It provides:

> "(1) In the event of damage to persons, property or interests resulting in the territory of the Federal Republic of Germany from the effects of airport traffic or of operation of the Salzburg airport and culpably caused, through unlawful conduct, by agents of the Republic of Austria in connexion with their official activities, the Federal Republic of Germany shall be liable in accordance with the laws and regulations governing its liability in respect of its own agents.
>
> "(2) The Federal Republic of Germany shall, if a claim is made against it pursuant to paragraph (1), notify the Republic of Austria accordingly without delay, and shall also inform it if the claim is brought before a court.
>
> "(3) The Republic of Austria shall be obligated, to the extent that its laws and regulations permit, to make available to the Federal Republic of

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85/ Agreement between the Federal Republic of Germany and the Republic of Austria concerning the effects on the territory of the Federal Republic of Germany of the construction and operation of the Salzburg airport (19 December 1967).

Germany such information and evidence obtainable by it as may be helpful in dealing with the damage claim.

"(4) The Federal Republic of Germany shall notify the Republic of Austria of the settlement of the claim; copies of the decision, agreement or other disposition resulting in a settlement shall be attached.

"(5) The Republic of Austria shall compensate the Federal Republic of Germany for its discharge of the liabilities arising from paragraph (1).

"(6) This article shall not apply where the damage is sustained by an Austrian national."

466. The above Agreement also provides that where the Federal Republic of Germany takes measures in connection with the airport that give rise to liability on the part of the airport operator, under German law, the Federal Republic shall accept the liability. However, Austria will reimburse the Government of the Federal Republic of Germany for all necessary costs and damages resulting from those measures. Article 4 of the agreement provides:

"(1) Where measures taken by German authorities in connexion with construction and operation of the Salzburg airport give rise under German law to liability for compensation on the part of the airport operator, such liability shall be assumed by the Federal Republic of Germany.

"(2) The Republic of Austria shall reimburse the Federal Republic of Germany, the state of Bavaria and its municipal corporations for all necessary costs and all damage incurred in connexion with construction and operation of the airport, especially costs arising under paragraph (1) and other costs incurred in meeting third-party claims."

467. In a number of agreements with Ireland, Italy and the Netherlands, the United States has accepted liability for certain injuries which may arise out of the use of ports of those States by the United States nuclear ship Savannah. The United States has further accepted liability for injuries arising from operation of the Savannah by a private company. Relevant paragraphs 1 and 4 of the Agreement between the United States and Ireland 86/ provide:

"(1) The United States Government shall provide compensation for all loss, damage, death or injury in Ireland (including Irish territorial seas) arising out of or resulting from the operation of N.S. Savannah to the extent that the United States Government, the United States Maritime Administration or a person indemnified under the indemnification Agreement is liable for public liability in respect of such loss, damage, death or injury.

"...

86/ Exchange of notes constituting an agreement relating to public liability for damage caused by the N.S. Savannah (18 June 1964).

"(4) The United States Government being liable in the conditions specified in paragraph (1) of this Agreement, shall not pursue any right of recourse against any person who might otherwise be liable for such loss, damage, death or injury."

468. Article VIII of a similar agreement between the United States and Italy 87/ provides:

"Article VIII

"Liability for Damage

"Within the limitations of liability set by United States Public Law 85-256 (annex "A"), as amended by 85-602 (annex "B"), in any legal action or proceeding brought in personam against the United States in an Italian court, the United States Government will pay compensation for any responsibility which an Italian court may find, according to Italian law, for any damage to people or goods deriving from a nuclear incident in connection with, arising out of or resulting from the operation, repair, maintenance or use of the Ship, in which the N.S. Savannah may be involved within Italian territorial waters, or outside of them on a voyage to or from Italian ports if damage is caused in Italy or on ships of Italian registry.

"Subject to the $500 million limitation in such public laws, the United States Government agrees not to interpose the defense of sovereign immunity and to submit to the jurisdiction of the Italian courts and not to invoke the provisions of Italian laws or any other law relating to the limitation of ship-owner's liability."

469. In an exchange of notes constituting an agreement between the United States of America and Italy concerning liability during private operation of N.S. Savannah the United States accepts liability. The relevant paragraphs of the agreement provide:

"concerning visits of the N.S. Savannah to Italy and to recent conversations with respect to the situation arising from the operation of the N.S. Savannah by a private company,

"... [the United States proposes:]

"Within the limitation of liability set by United States Public Law 85-256 (Annex A), as amended by 85-602 (Annex B) in any legal action or proceding brought in personam against the operator to the N.S. Savannah in an Italian court, the United States Government will provide compensation by way of indemnity for any legal liability which an Italian court may find for any damage to people or goods deriving from a nuclear incident in connection with,

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87/ Agreement between the Government of the United States of America and the Government of Italy on the Use of Italian Ports by the N.S. Savannah (23 November 1964).

arising out of or resulting from the operation, repair, maintenance or use of the N.S. Savannah, in which the N.S. Savannah may be involved within Italian territorial waters, or outside of them on a voyage to or from Italian ports if damage is caused in Italy or on ships of Italian registry."

470. Similarly, articles 1 and 3 of a treaty between the United States and the Netherlands 88/ regarding the N.S. Savannah provide:

"Article 1

"The United States shall provide compensation for damage which arises out of or results from a nuclear incident in connection with the design, development, construction, operation, repair, maintenance or use of the N.S. Savannah provided, and to the extent, that any competent court of the Netherlands or a Commission to be established under Netherlands law, determines the United States to be liable for public liability. The principles of law which shall govern the liability of the United States for any such damage shall be those in existence at the time of the occurrence of the said nuclear incident."

"Article 3

"The United States shall pursue no rights of recourse against any person who on account of any act or omission committed on Netherlands territory would be liable for damage as described in Article 1."

471. The Operational Agreement on Arrangements for a visit of the N.S. Savannah to the Netherlands provides in article 26 that in the event of the ship running ashore, running aground or sinking in Netherlands waters, the Netherlands may take the necessary measures at the owner's expense:

"Article 26

"In the event of the Ship running ashore, running aground or sinking in Netherlands waters the competent authorities under Netherlands law may take the necessary action at the owners' expense. The United States Government shall offer all possible assistance and in particular shall make available any equipment which might prove necessary to expedite required operations."

88/ Agreement between the Government of the Kingdom of the Netherlands and the Government of the United States of America on public liability for damage caused by the N.S. Savannah (6 February 1963).

472. There is also a similar agreement between Liberia and the Federal Republic of Germany regarding the latter's nuclear ship. 89/ Article 16 of the Treaty provides:

"Article 16

"(1) The Federal Republic of Germany shall ensure the payment of claims for compensation for nuclear damage established under this Treaty against the operator of the Ship by providing the necessary funds up to a maximum amount of DM 400 million (four hundred million). Funds shall be provided only to the extent that the yield of the insurance or other financial security is inadequate to satisfy such claims.

"(2) The Government of the Federal Republic of Germany shall, upon request of the Liberian Government, make the amount available three months after the judgement against the operator has become final."

Judicial decisions and State practice other than agreements

473. Judicial decisions, official correspondence and State interaction examined here indicate that States appear to have remained liable for both private activities within their territorial domain and State activities within and beyond their territorial control. Even when States have purportedly refused to accept liability as a legal principle characterizing the consequences of their behaviour, their conduct was tantamount to acceptance regardless of the terms they used to describe it. Most of the cases and incidents examined here are related to activities normally conducted by States.

474. In the claim against the Union of Soviet Socialist Republics for damage caused by the Soviet Cosmos 954, Canada sought to impose "absolute liability" on the Soviet Union for injuries suffered by Canada from the accidental crash of a Soviet nuclear-powered satellite on Canadian territory. In arguing the liability of the Soviet Union, Canada not only invoked "relevant international agreements", including the 1972 Convention on International Liability for Damage Caused by Space Objects, but also invoked "general principles of international law". Under the latter, Canada claimed:

"The standard of absolute liability for space activities, in particular activities involving the use of nuclear energy, is considered to have become a general principle of international law. A large number of States, including

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89/ Treaty between the Republic of Liberia and the Federal Republic of Germany on the Use of Liberian Waters and Ports by N.S. Otto Hahn (27 May 1970). Article 16 of the Agreement provides that the Federal Republic of Germany shall ensure the payment of compensation or nuclear damage established under the treaty against the operator of the ship.

Canada and the Union of Soviet Socialist Republics, have adhered to this principle as contained in the 1972 Convention on International Liability for Damage caused by Space Objects. The principle of absolute liability applies to fields of activities having in common a high degree of risk. It is repeated in numerous international agreements and is one of the general principles of law recognized by civilized nations." 90/

475. In the Corfu Channel decision, liability was placed on Albania for failure to notify British ships of a dangerous condition existing within her territorial control which may or may not have been caused by the Government of Albania. The Court found that it was the obligation of the Government of Albania to notify, for the benefit of shipping and others, the existence of a minefield, not only on the basis of The Hague Convention of 1907, No. VIII, but also on "certain general and well-recognized principles, namely: elementary considerations of humanity, even more enacting in peace than in war, ..., and every State's obligation not to allow knowing by its territory to be used for acts contrary to the rights of other States." 91/ The Court found that no attempt had been made by Albania to prevent the disaster and hence the Court held Albania "responsible under international law for the explosions ... and for the damage and loss of human life ...". 92/

476. In relation to the construction of a highway in Mexico, although the United States Section of the Commission on the International Boundary and Water Commission (United States and Mexico) acted for two years in an engineering advisory capacity to the Department of State in an informal discussion on the project, and as a result certain changes were made in the project, the United States Government still invoked its right to compensation under international law for any possible injuries which might occur from the construction of the highway. In a note on 29 July 1959 to the Mexican Foreign Office, the United States Secretary of State, after referring to the report of the United States engineers to the effect that the modifications would barely meet the minimum standard for such embankments, requested Mexico to take all necessary steps to prevent any injuries to the United States:

"My Government has accordingly instructed me to urge the Government of Mexico to take appropriate steps to prevent the damage to property and the injury to persons that are likely to result from the improper construction of the highway. I urge particularly that further construction at the Arroyo de las Cabras be suspended until arrangements can be made by the Government of Mexico for adoption of features essential for the security of

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90/ International Legal Materials, vol. 18, p. 905.

91/ I.C.J. Reports (1949), p. 22. Emphasis added.

92/ Ibid., p. 36.

the embankment in that canyon, and that the embankment at the Arroyo de San Antonio be opened to prevent the accumulation of flood water pending installation of similar modifications at that canyon." 93/

477. The United States reserved its rights under international law in the event of any injuries resulting from the highway:

"In view of the foregoing, I am instructed to reserve all the rights that the United States may have under international law in the event that damage in the United States results from the construction of the highway." 94/

478. In the Rose Canal matter between the United States and Mexico, both the United States and Mexico reserved the right to seek to impose liability for injury which might arise from construction made by the other State on its respective territory. 95/

479. In the correspondence between Canada and the United States regarding the United States Cannikin underground nuclear test on Amchitka, Canada reserved its rights to compensation in the event of damage. 96/

480. The injuries resulting from the 1 March 1954 United States hydrogen bomb test on Eniwetok Atoll went far beyond the danger area; it caused injury to Japanese fishermen on the high seas, contaminated a great part of the atmosphere and a considerable quantity of fish, thus disturbing the Japanese fish market substantially. Japan demanded compensation. In a note, the United States Government, completely avoiding any reference to legal liability, paid compensation to Japan for injury caused by the test:

"The Government of the United States of America has made it clear that it is prepared to make monetary compensation as an additional expression of its concern and regret over the injuries sustained ... the United States of America hereby tends, ex gratia, to the Government of Japan, without reference to the question of legal liability, the sum of two million dollars for purposes of compensation for the injuries or damages sustained as a result of nuclear tests in the Marshall Islands in 1954 ...

"It is the understanding of the Government of the United States of America that the Government of Japan, in accepting the tendered sum of two million dollars, does so in full settlement of any and all claims against

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93/ M. Whiteman, Digest of International Law, vol. 6, pp. 261-262.

94/ Whiteman, op. cit., p. 262.

95/ Ibid., pp. 262-264.

96/ International Canada, vol. 2, p. 97.

the United States of America or its agents, nationals or judicial entities for any and all injuries, losses or damages arising out of the said nuclear test." 97/

481. In relation to the injuries suffered by the inhabitants of the Marshall Islands, then a Trust Territory of the United States, the United States appears to have accepted to pay compensation. In the report of the Committee on Interior and Insular Affairs of the United States Senate it was explained that some 82 people were living on Rongelap at the time of an unexpected wind shift immediately following the test. Describing the personal and property injuries the residents suffered and the immediate and the extensive medical assistance given by the United States, the report concluded that: "It cannot be said, however, that the compensatory measures heretofore taken are fully adequate." The report disclosed that in February 1960 a complaint against the United States was sent to the high court of the Trust Territory for $8,500,000 as compensation for property damage, radiation sickness, burns, physical and mental agony, loss of consortium and medical expenses. The suit was dismissed for lack of jurisdiction. The report, however, concluded that House resolution 1988 (to pay compensation) was "needed to permit the United States to do justice to these people". 98/ On 22 August 1964, President Johnson signed into law an act under which the United States assumed "compassionate responsibility to compensate inhabitants of the Rongelap Atoll, in the Trust Territory of the Pacific Islands, for radiation exposure, sustained by them as a result of a thermonuclear detonation at Bikini Atoll in the Marshall Islands on March 1, 1954" and authorized $950,000 to be paid in equal amounts to the affected inhabitants of Rongelap. 99/ There was also a report in June 1982 that President Reagan's Administration was prepared to pay $100 million to the Government of the Marshall Islands in settlement of all claims against the United States by islanders whose health and property were affected by United States nuclear-weapons tests in the Pacific between 1946 and 1963. 100/ Reportedly, the Islanders so far have filed suits in the United States in excess of $4 billion. 100/

482. The Gut Dam arbitral award bears also on State liability. In 1874, a Canadian engineer proposed to his Government the construction of a dam between Adams Island in Canadian territory and Les Galops, in the United States, for the purpose of improving navigation in the St. Lawrence River. After investigations and the exchange of many reports and formal approval by an act of the United States Congress, the Canadian Government proceeded to construct the dam in 1903. However, it soon became clear that the dam was too low to serve the desired end and with

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97/ Department of State Bulletin, vol. 32 (1955), pp. 90-91.

98/ Whiteman, op. cit., vol. 4, p. 587.

99/ Ibid., p. 567. Emphasis added.

100/ International Herald Tribune, 15 June 1982, p. 5, col. 2.

United States permission, Canada increaed the height of the dam. Between 1904 and 1951, several man-made changes affected the flow of water in the Great Lakes-St. Lawrence River basin. While the dam itself was not altered in any way, the level of the water in the river and nearby Lake Ontario increased. In 1951-1952, the level of waters reached unprecedented heights which, in combination with storms and other natural phenomena, resulted in extensive flooding and erosion, causing injuries on both the north and the south shores of the lakes. Canada, in 1953, removed its dam as part of the construction of the St. Lawrence Seaway, but the United States claims for damages allegedly resulting from the presence of Gut Dam still festered for some years. 101/

483. The Lake Ontario Claims Tribunal was set up to resolve the matter. The Tribunal recognized the liability of Canada without examining any question of fault or negligence on the part of Canada. The Tribunal, of course, relied a great deal on the terms of the second condition in the instrument of approval for construction of the dam by the United States Secretary of War of 18 August 1903 and 10 October 1904 as well as the Canadian unilateral acceptance of liability. The Tribunal further found Canada liable, not only to the citizens of Les Galops regarding injuries from the dam, but also to all United States citizens. Such responsibiity was moreover found not to be limited in time to some initial testing period. The Tribunal found that the only questions remaining to be settled were whether Gut Dam had caused the damage for which claims had been filed and the quantum of compensation.

484. There have been other transboundary incidents regarding activities carried out by Governments within their territories, with effects on the neighbouring State for which there has been no open demand by the injured State for compensation. These incidents are of course minor and of a more accidental nature.

485. In 1949, Austria made a formal protest to the Hungarian Government for installing mines in its territory close to the Austrian border, and demanded removal of the mines, but it did not claim compensation for injuries the explosion of the mines had caused to Austria. Hungary had laid land mines to prevent the illegal passage of persons across the border. Austria was concerned that during a flood mines might be washed into Austrian territory and endanger the life of its citizens living near the border. Those protests, however, did not prevent Hungary from maintaining the minefield in existence. 102/ In 1966, a Hungarian contact mine crossed the border, exploded and caused extensive damage. The Austrian Ambassador lodged a strong protest with the Hungarian Foreign Ministry, accusing Hungary of violating the uncontested international legal principle according to which measures taken in the territory of one State must not endanger the lives, health and the property of citizens of another State. Austria sent another protest to Hungary after the occurrence of a second accident, stating that the absence of a public commitment by Hungary to take all measures to prevent such accidents in the future was totally inconsistent with the principle of "good neighbourliness".

101/ Canada-United States Settlement of Gut Dam Claims, 22 September 1968. Report of the agent of the United States before the Lake Ontario Claims Tribunal, International Legal Materials, vol. 8 (1969), pp. 118 and 128-138.

102/ Guggenheim, "La pratique suisse" (1956), Annuaire suisse de droit international, vol. 14 (1957), p. 169.

Subsequently, Hungary removed or relocated all mine fields away from the Austrian border. 103/

486. In October 1968, in a shooting exercise, a Swiss artillery unit erroneously shot four times across the border to the territory of Liechtenstein by cannon. The facts about this incident are difficult to ascertain, but it is evident that the Swiss Government, in a note to the Government of Liechtenstein, expressed regrets for the involuntary violation of its territory. In the note, the Swiss Government expressed its willingness to pay compensation for injuries caused by the accident and assured the authorities of Liechtenstein that it would take all necessary measures to prevent future incidents. 104/

487. Judicial decisions and official correspondence demonstrate that States have accepted liability for the injurious impact of activities by private entities within their territory. The legal basis for such State liability appears to derive from the principle of territorial sovereignty, a concept investing States with exclusive rights within a certain portion of the globe. This formulation of the function of territorial sovereignty was emphasized in the Island of Palmas case. 105/ The Arbitrator stated that territorial sovereignty "cannot limit itself to its negative, i.e., to excluding the activities of other States; for it serves to divide between nations the space upon which human activities are deployed, in order to assure them at all points the minimum of protection of which international law is the guardian". 106/ This formulation was later conjoined by a more realistic approach; namely, that actual physical control is the sound base for State liability and responsibility. The International Court of Justice, in its Namibia Advisory Opinion, stated that "Physical control of a territory, and not sovereignty or legitimacy of title, is the basis of State liability for acts affecting other States". 107/ From this perspective, the liability of States for extraterritorial damage caused by private persons under their control is an important issue to be examined in the context of this study. The following are examples of State practice touching this source of State liability.

488. In 1948, a munitions factory in Arcisate, Italy, exploded and caused varying degrees of damage in several Swiss communities across the border. The Swiss

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103/ See Handl, "An international legal perspective on the conduct of abnormally dangerous activities in frontier areas: the case of nuclear power plant siting", Ecology Law Quarterly, vol. 7 (1978), pp. 23-24.

104/ Annuaire suisse de droit international, vol. 26 (1969-1970), p. 158.

105/ (Netherlands and United States of America), Reports of International Arbitral Awards, vol. II, p. 829.

106/ Ibid., p. 839.

107/ Legal Consequences for States of the Continued Presence of South Africa in Namibia (South West Africa) notwithstanding Security Council resolution 276 (1970), Order No. 2 of 26 January 1971, I.C.J. Reports 1971, p. 54, para. 118.

Government demanded reparation from the Italian Government for the damage sustained. The Swiss Government invoked the principle of good neighbourliness and argued that Italy was liable since it tolerated the existence of an explosives factory as well as its attendant hazards in the immediate vicinity of an international border. 108/

489. The river Mura, the international boundary between Yugoslavia and Austria, was extensively polluted when several Austrian hydroelectric facilities of the river released accumulated sediments and mud by partially draining the reservoirs. 109/ Yugoslavia claimed compensation for economic loss incurred by two paper mills and by the fisheries. In 1959, the two States agreed to settle the dispute; as a result Austria paid monetary compensation as well as delivering a certain quantity of paper to Yugoslavia. Although the settlement was reached within the framework of the Permanent Austro-Yugoslavian Commission for the River Mura, this is a case in which the injured State invoked the direct liability of the controlling State and the controlling State accepted the claim to pay compensation.

490. In 1971, the Liberian tanker Juliana ran aground and split apart off Niigata, on the west coast of the Japanese island of Honshu. The oil of the tanker washed ashore and extensively damaged the local fisheries. The Liberian Government (the flag State) apparently offered 200 million yen to the fishermen for damage which they reportedly accepted. The Liberian Government accepted the claims to pay for damage caused by an act done by a private person. It seems that no allegations of any wrongdoing on the part of Liberia were made on an official diplomatic level. 110/

491. In 1972, the Liberian-registered tanker World Bond, while engaged in unloading operations at the Atlantic Richfield refinery at Cherry Point, Washington, spilled 12,000 gallons of crude oil into the sea. The oil spread to Canadian waters and polluted beaches in British Columbia. 111/ Canada sent a note to the United States State Department in which it expressed its grave concern about this ominous incident and noted that "the Government wishes to obtain firm assurances that full compensation for all damages as well as the cost of clean-up operations will be paid by those legally responsible. 112/ The Canadian Secretary of State for External Affairs, reviewing the legal implication of the incident, stated:

108/ Guggenheim, loc. cit., vol. 14 (1957), p. 169.

109/ See Handl, "State liability for accidental transnational environmental damage by private persons", American Journal of International Law, vol. 74 (1980), p. 525; The Times (London), 2 December 1971, p. 8, col. 1.

110/ The Secretariat has not been able to find reference to any such claims in public documents available to it for research.

111/ International Canada, vol. 3 (1972), p. 93.

112/ Canadian Yearbook of International Law, vol. 11, pp. 333-334.

"We are expecially concerned to ensure observance of the principle established in the 1938 Trail Smelter arbitration between Canada and the United States. This has established that one country may not permit the use of its territory in such a manner as to cause injury to the territory of another and shall be responsible to pay compensation for any injury so suffered. Canada accepted this responsibility in the Trail Smelter case and we would expect that the same principle would be implemented in the present situation. Indeed, this principle has already received acceptance by a considerable number of states and hopefully it will be adopted at the Stockholm conference as a fundamental rule of international environmental law." 113/

492. Canada, referring to the Trail Smelter as a relevant precedent, claimed that the United States was responsible for the extraterritorial damage caused by acts done within its territorial control without regard as to whether the United States was at fault. The final resolution of the dispute did not involve the legal principle invoked by Canada; the private polluter offered to pay the costs of the clean-up operations; the official United States' response to the Canadian claim has remained unclear.

493. In 1973, a major contamination occurred in the Swiss canton of Bâle-Ville because of production of insecticides by a French chemical factory across the border. The contamination caused damage to agriculture and the environment of that canton and destroyed some 10,000 litres of milk production per month. 114/ The facts about the case and the diplomatic negotiations are difficult to ascertain. The Swiss Government apparently intervened and negotiated with French authorities in order to halt the pollution and obtain compensation for the damage. The reaction of French authorities is unclear; however, it appears that persons injured have brought charges in French courts. 114/

494. In a negotiation between the United States and Canada regarding oil exploration in that country, Canada assumed responsibility to pay compensation for any damage which might be caused to the United States by oil exploration in Canada by a Canadian private corporation. The oil exploration activities were to be undertaken in the Beaufort Sea off the Mackenzie River delta. 115/ The plan caused concern in Alaska, the neighbouring territory, particularly regarding the safety measures of the programme and in particular the availability of compensation funds to potential pollution victims outside Canada. As the result of negotiations between the two countries, the private operator was requested to postpone the plan unless it could secure compensation for potential United States victims. Subsequently, the Canadian Government guaranteed the payment of the sums involved. In other words, it accepted liability on a subsidiary basis in the event that the bonding arrangement proved to be inadequate to pay the cost of extraterritorial damage caused by a private corporation.

113/ Ibid., p. 334.

114/ Annuaire suisse de droit international, vol. 30, p. 147.

115/ International Canada vol. 7 (1976), pp. 84-85.

D. Exoneration from liability

495. As under domestic law, in interstate relationships, there are certain circumstances under which liability may be ruled out. The principles governing exoneration from liability in interstate relationships also appear to be similar to their counterparts in domestic law, such as the statute of limitation, contributory negligence, war, civil insurrection, natural disaster of an exceptional character, etc.

Multilateral agreements

496. Under certain circumstances, liability of the operator or the State may be precluded. Some multilateral conventions have provided for such exoneration. A more typical exoneration is by virtue of the statute of limitation. Article 21 of the Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface provides that actions under the Convention are limited to two years from the date of the incident. Any suspension or interruption of these two years is determined by the law of the Court where the action is brought. Nevertheless, the maximum time for bringing an action cannot extend beyond three years from the date of the accident. The article provides:

"Article 21

"1. Actions under this Convention shall be subject to a period of limitation of two years from the date of the incident which caused the damage.

"2. The grounds for suspension or interruption of the period referred to in paragraph 1 of this Article shall be determined by the law of the court trying the action; but in any case the right to institute an action shall be extinguished on the expiration of three years from the date of the incident which caused the damage."

497. Articles 16 and 17 of the Additional Convention to the International Convention concerning the Carriage of Passengers and Luggage by Rail (CIV) of 25 February 1961 relating to the liability of railways for death of and personal injury to passengers (with Protocol B, 1 July 1966 - Protocol I, 31 December 1971) provide for a period of time after which a right of action will be extinguished. These articles provide:

"Article 16

Extinction of rights of action

"1. A claimant shall lose his right of action if he does not give notice of the accident to a passenger to one of the railways to which a claim may be presented in accordance with Article 13 within three months of his becoming aware of the damage.

"When notice of the accident is given orally by the claimant, confirmation of this oral notice must be delivered to the claimant by the railway to which the accident has been notified.

"2. Nevertheless the right of action shall not be extinguished:

"(a) if, within the period of time provided for in paragraph 1, the claimant has made a claim to one of the railways designated in Article 13(1);

"(b) if the claimant proves that the accident was caused by the wrongful act or neglect of the railway;

"(c) if notice of the accident has not been given, or has been given late, as a result of circumstances for which the claimant is not responsible;

"(d) if during the period of time specified in paragraph (1), the railway responsible - or one of the two railways if in accordance with Article 2(6) two railways are responsible - knows of the accident to the passenger through other means.

"Article 17

"Limitation of actions

"1. The periods of limitation for actions for damages brought under this Convention shall be:

"(a) in the case of the passenger who has sustained an accident, three years from the day after the accident;

"(b) in the case of other claimants, three years from the day after the death of the passenger, or five years from the day after the accident, whichever is the earlier.

"2. When a claim is made to the railway in accordance with Article 13, the three periods of limitation provided for in paragraph 1 shall be suspended until such date as the railway rejects the claim by notification in writing and returns the documents attached thereto. If part of the claim is admitted, the period of limitation shall start to run again only in respect of that part of the claim still in dispute. The burden of proof of the receipt of the claim or of the reply and of the return of the documents shall rest with the party relying upon these facts.

"The running of the period of limitation shall not be suspended by further claims having the same object.

"3. A right of action which has become barred by lapse of time may not be exercised even by way of counterlciam or set-off.

"4. Subject to the foregoing provisions, the limitation of actions shall be goverened by national law."

498. The Convention further provides for exoneration from liability of the railway if the accident has been caused by circumstances not connected with the operation of the railway and if the railway, in spite of having taken the care required, could not avoid the consequences and the accident. Article 2 (6) of the Convention provides:

> "The railway shall be relieved of liability if the accident has been caused by circumstances not connected with the operation of the railway and which the railway, in spite of having taken the care required in the particular circumstances of the case, could not avoid and the consequences of which it was unable to prevent."

499. The statute of limitation of the Convention on the Liability of Operators of Nuclear Ships provides for 10 years from the date of the nuclear incident. The domestic law of the licensing State may provide for a longer period. Article V of the Convention provides:

"Article V

> "1. Rights of compensation under this Convention shall be extinguished if an action is not brought within ten years from the date of the nuclear incident. If, however, under the law of the licensing State the liability of the oprator is covered by insurance or other financial security or State indemnification for a period longer than ten years, the applicable national law may provide that rights of compensation against the operator shall only be extinguished after a period which may be longer than ten years but shall not be longer than the period for which his liability is so covered under the law of the licensing State. However, such extension of the extinction period shall in no case affect the right of compensation under this Convention of any person who has brought an action for loss of life or personal injury against the operator before the expiry of the aforesaid period of ten years.
>
> "2. Where nuclear damage is caused by nuclear fuel, radioactive products or waste which were stolen, lost, jettisoned, or abandoned, the period established under paragraph 1 of this Article shall be computed from the date of the nuclear incident causing the nuclear damage, but the period shall in no case exceed a period of twenty years from the date of the theft, loss, jettison or abandonment.
>
> "3. The applicable national law may establish a period of extinction or prescription of not less than three years from the date on which the person who claims to have suffered nuclear damage had knowledge or ought reasonably to have had knowledge of the damage and of the person responsible for the damage, provided that the period established under paragraphs 1 and 2 of this Article shall not be exceeded.
>
> "4. Any person who claims to have suffered nuclear damage and who has brought an action for compensation within the period applicable under this Article may amend his claim to take into account any aggravation of the damage, even after the expiry of that period, provided that final judgment has not been entered."

500. The Convention also provides for exoneration from liability of the operators of a nuclear ship if the damage was caused due to act of war, hostilities, civil war or insurrection. Article VIII of the Convention provides:

"Article VIII

"No liability under this Convention shall attach to an operator in respect to nuclear damage caused by a nuclear incident directly due to an act of war, hostilities, civil war or insurrection."

501. A 10-year statute of limitation has also been provided in the Vienna Convention on Civil Liability for Nuclear Damage and the Convention on Third Party Liability in the Field of Nuclear Energy. Article VI of the former Convention provides:

"ARTICLE VI

"1. Rights of compensation under this Convention shall be extinguished if an action is not brought within ten years from the date of the nuclear incident. If, however, under the law of the Installation State the liability of the operator is covered by insurance or other financial security or by State funds for a period longer than ten years, the law of the compentent court may provide that rights of compnsation against the operator shall only be extinguished after a period which may be longer than ten years, but shall not be longer than the period for which his liability is so covered under the law of the Installation State. Such extension of the extinction period shall in no case affect rights of compensation under this Convention of any person who has brought an action for loss of life or personal injury against the operator before the expiry of the aforesaid period of ten years.

"2. Where nuclear damage is caused by a nuclear incident involving nuclear material which at the time of the nuclear incident was stolen, lost, jettisoned or abandoned, the period established pursuant to paragraph 1 of this Article shall be computed from the date of that nuclear incident, but the period shall in no case exceed a period of twenty years from the date of the theft, loss, jettison or abandonment.

"3. The law of the competent court may establish a period of extinction or prescription of not less than three years from the date on which the person suffering nuclear damage had knowledge or should have had knowledge of the damage and of the operator liable for the damage, provided that the period established pursuant to paragraphs 1 and 2 of this Article shall not be exceeded."

502. Articles 8 and 9 of the Convention on Third Party Liability in the Field of Nuclear Energy provide:

"Article 8

"(a) The right of compensation under this Convention shall be extinguished if an action is not brought within ten years from the date of the

nuclear incident. In the case of damage caused by a nuclear incident involving nuclear fuel or radioactive products or waste which, at the time of the incident have been stolen, lost, or abandoned and have not yet been recovered, the period for the extinction of the right shall be ten years from the date of the theft, loss, or abandonment. National legislation may, however, establish a period of not less than two years for the extinction of the right or as a period of limitation either from the date at which the person suffering damage has knowledge or from the date at which he ought reasonably to have known of both the damage and the operator liable: provided that the period of ten years shall not be exceeded except in accordance with paragraph (c) of this article.

"(b) Where the provisions of Article 13(d)(i)(2) or (ii) are applicable, the right of compensation shall not, however, be extinguished if, within the time provided for in paragraph (a) of this article,

"(i) prior to the determination by the Tribunal referred to in Article 17, an action has been brought before any of the courts from which the Tribunal can choose; if the Tribunal determines that the competent court is a court other than that before which such action has already been brought, it may fix a date by which such action has to be brought before the competent court so determined; or

"(ii) a request has been made to a Contracting Party to initiate a determination by the Tribunal of the competent court pursuant to Article 13(d)(i)(2) or (ii) and an action is brought subsequent to such determination within such time as may be fixed by the Tribunal.

"(c) National legislation may establish a period longer than ten years if measures have been taken to cover the liability of the operator in respect of any actions for compensation begun after the expiry of the period of ten years.

"(d) Unless national law provides to the contrary, any person suffering damage caused by a nuclear incident who has brought an action for compensation within the period provided for in this article may amend his claim in respect of any aggravation of the damage after the expiry of such period provided that final judgment has not been entered by the competent court.

"Article 9

"Except insofar as national legislation may provide to the contrary, the operator shall not be liable for damage caused by a nuclear incident due to an act of armed conflict, invasion, civil war, insurrection, or a grave natural disaster of an exceptional character."

503. The Convention on International Liability for Damage Caused by Space Objects provides a one-year limit for bringing actions for damages. The one year runs from the occurrence of the damage or from the identification of the launching State which is liable. This period, however, shall not, under the Convention exceed one year following the date by which the State could reasonably be expected to have learned of the facts. Article X of the Convention provides:

"Article X

"1. A claim for compensation for damage may be presented to a launching State not later than one year following the date of the occurrence of the damage or the identification of the launching State which is liable.

"2. If, however, a State does not know of the occurrence of the damage or has not been able to identify the launching State which is liable, it may present a claim within one year following the date on which it learned of the aforementioned facts; however, this period shall in no event exceed one year following the date on which the State could reasonably be expected to have learned of the facts through the exercise of due diligence.

"3. The time-limits specified in paragraphs 1 and 2 of this article shall apply even if the full extent of the damage may not be known. In this event, however, the claimant State shall be entitled to revise the claim and submit additional documentation after the expiration of such time-limits until one year after the full extent of the damage is known."

504. An action for damages may be brought up within three years from the date of the occurrence of the damage under the International Convention on Civil Liability for Oil Pollution Damage. No action can be brought up after six years from the date of the incident which caused damage. Article VIII of the Convention provides:

"ARTICLE VIII

"Rights of compensation under this Convention shall be extinguished unless an action is brought thereunder within three years from the date when the damage occurred. However, in no case shall an action be brought after six years from the date of the incident which caused the damage. Where this incident consists of a series of occurrences, the six years' period shall run from the date of the first such occurrence."

505. The provisions of this Convention do not apply to warships or other ships owned or operated only for governmental and non-commercial service. Article XI provides:

"ARTICLE XI

"1. The provisions of this Convention shall not apply to warships or other ships owned or operated by a State and used, for the time being, only on Government non-commercial service."

506. An identical statute of limitation has been stipulated in the Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage. Article 6 of the Convention provides:

"Article 6

"1. Rights to compensation under Article 4 or indemnification under Article 5 shall be extinguished unless an action is brought thereunder or a notification

has been made pursuant to Article 7, paragraph 6, within three years from the date when the damage occurred. However, in no case shall an action be brought after six years from the date of the incident which caused the damage.

"2. Notwithstanding paragraph 1, the right of the owner or his guarantor to seek indemnification from the Fund pursuant to Article 5, paragraph 1, shall in no case be extinguished before the expiry of a period of six months as from the date on which the owner or his guarantor acquired knowledge of the bringing of an action against him under the Liability Convention."

507. Contributory negligence by the injured party has also been held to extinguish the total or partial liability of the operator or the acting State in some multilateral conventions. Under the Vienna Convention on Civil Liability for Nucler Damage, if the injury is caused as the result of the gross negligence of the claimant or an act or omission of such person with intent to cause damage, the competent court may, if its domestic law provides, relieve the operator wholly or partly from his obligation to pay damage to such person. However, it is the operator who should prove the negligence of the claimant. Article IV of the Convention provides:

"...

"2. If the operator proves that the nuclear damage resulted wholly or partly either from the gross negligence of the person suffering the damage or from an act or omission of such person done with intent to cause damage, the competent court may, if its law so provides, relieve the operator wholly or partly from his obligation to pay compensation in respect of the damage suffered by such person."

508. Paragraph 3 of the above article also provides for exoneration from liability if the injury is caused by a nuclear incident directly due to act of armed conflict, hostilities, civil war or insurrection. Thus, unless provided by the domestic law of the installation State, the operator is not liable for nuclear damage caused by a nuclear incident directly due to grave natural disaster of an exceptional character. Paragraph 3 of article IV of the Convention provides:

"3. (a) No liability under this Convention shall attach to an operator for nuclear damage caused by a nuclear incident directly due to an act of armed conflict, hostilities, civil war or insurrection.

"(b) Except in so far as the law of the Installation State may provide to the contrary, the operator shall not be liable for nuclear damage caused by a nuclear incident directly due to a grave natural disaster of an exceptional character."

509. War, hostilities, civil war, insurrection or natural phenomenon of exceptional, inevitable and irresistable character are elements which will provide exoneration from liability, in additional to the contributory negligence by the claimant, under the International Convention on Civil Liability for Oil Pollution Damage. Thus, when the damage is wholly caused by the negligence or other wrongful

act of any Government or authorities responsible for the maintenance of lights or other navigational aids, the owner is also exonerated from liability. Again the burden of proof is on the shipowner. Article III of the Convention provides:

"Article III

"1. ...

"2. ... No liability for pollution damage shall attach to the owner if he proves that the damage:

"(a) resulted from an act of war, hostilities, civil war, insurrection or a natural phenomenon of an exceptional, inevitable and irresistable character, or

"(b) was wholly caused by an act or omission done with intent to cause damage by a third party, or

"(c) was wholly caused by the negligence or other wrongful act of any Government or other authority responsible for the maintenance of lights or other navigational aids in the exercise of that function.

"3. If the owner proves that the pollution damage resulted wholly or partially either from an act or omission done with intent to cause damage by the person who suffered the damage or from the negligence of that person, the owner may be exonerated wholly or partially from his liability to such person."

510. When the launching State proves that the damage caused to the claimant State has been wholly or partly the result of gross negligence or an act or omission of the claimant State or its subjects with the intent to cause damage, it will be exonerated from liability under the Convention on International Liability for Damage Caused by Space Objects. Article VI of the Convention provides:

"Article VI

"1. Subject to the provisions of paragraph 2 of this article, exoneration from absolute liability shall be granted to the extent that a launching State establishes that the damage has resulted either wholly or partially from gross negligence or from an act or omission done with intent to cause damage on the part of a claimant State or of natural or juridical persons it represents."

511. If a claimant passenger suffers injuries due to his own wrongful act or neglect or his behaviour not in conformity with the normal conduct of a passenger, he may have no right of action against the railway. The railway in such cases may be relieved wholly or partially from liability. Article 2 of the Additional Convention to the International Convention concerning the Carriage of Passengers and Luggage by Rail (CIV) of 25 February 1961 relating to the liability of railways for death of and personal injury to passengers (with Protocol B) 1 July 1966 - Protocol I, provides:

"Article 2

"...

"...

"3. The railway shall be relieved wholly or partly of liability to the extent that the accident is due to the passenger's wrongful act or neglect or to behaviour on his part not in conformity with the normal conduct of passengers.

"4. The railway shall be relieved of liability if the accident is due to a third party's behaviour which the railway, in spite of taking the care required in the particular circumstances of the case, could not avoid and the consequences of which it was unable to prevent."

512. When an injury is caused solely through the negligence or other wrongful act or omission of the injured person or his servants or agents, under the Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface, the compensation shall be reduced to the extent to which the negligence or other wrongful act contributed to the damage. Article 6 of the Convention provides:

"Article 6

"1. Any person who would otherwise be liable under the provisions of this Convention shall not be liable for damage if he proves that the damage was caused solely through the negligence or other wrongful act or omission of the person who suffers the damage or of the latter's servants or agents. If the person liable proves that the damage was contributed to by the negligence or other wrongful act or omission of the person who suffers the damage, or of his servants or agents, the compensation shall be reduced to the extent to which such negligence or wrongful act or omission contributed to the damage. Nevertheless there shall be no such exoneration or reduction if, in the case of the negligence or other wrongful act or omission of a servant or agent, the person who suffers the damage proves that his servant or agent was acting outside the scope of his authority.

"2. When an action is brought by one person to recover damages arising from the death or injury of another person, the negligence or other wrongful act or omission of such other person, or of his servants or agents, shall also have the effect provided in the preceding paragraph."

513. Under Articles 3, paragraph 3 and 7, paragraph 5 of the Draft Convention on Liability and Compensation in connection with the Carriage of Noxious and Hazardous Substances by Sea, if the owner of the ship or the shipper of noxious substances proves that the damage resulted wholly or partially either from an act or omission done with the intent to cause damage by the person who suffered the damage or from the negligence of that person, the owner or the shipper may be exonerated wholly or partially from his liability to such person.

514. Article 3, paragraph 2 of the Draft Convention for Liability and Compensation in connection with the Carriage of Noxious and Hazardous Substances by Sea provides that no liability shall attach to the owner of the ship or the shipper if they prove that damage resulted from an act of war, hostilities, civil war, insurrection or a natural phenomenon of an exceptional and irresistible character, or was wholly caused by an act or omission done with the intent to cause damage by a third party. There was a proposal to add another subparagraph to that article in which exoneration from liability of the owner or the shipper would be provided for if the damage was wholly caused by negligence or other wrongful act of any Government or other authority responsible for the maintenance of lights or other navigational aids. There is, however, no indication in the Draft Articles as to whether or not the negligent State is liable for damage. This article does not appear to provide for exoneration from liability for damage caused by natural disaster.

515. Article 139 of the Convention on the Law of the Sea also provides for exoneration from liability of the State for damage caused by any failure of a person whom the State has sponsored to comply with regulations on sea-bed mining, if the State party has taken all necessary and appropriate measures to secure effective compliance under article 153, paragraph 4 and annex III, article 4, paragraph 3. Paragraph 2 (b) of article 153 deals with joint activities undertaken by the "Authority", or natural or juridical persons, or States parties to exploit sea-bed resources. Paragraph 4 of article 153 provides for the control of the "Authority" over activities undertaken by States parties, their enterprises or subjects. Article 139 provides:

"Article 139

"Responsibility to ensure compliance and liability for damage

"1. States Parties shall have the responsibility to ensure that activities in the Area, whether carried out by States Parties, or state enterprises or natural or juridical persons which possess the nationality of States Parties or are effectively controlled by them or their nationals, shall be carried out in conformity with this Part. The same responsibility applies to international organizations for activities in the Area carried out by such organizations.

"2. Without prejudice to the rules of international law and Annex III, article 22, damage caused by the failure of a State Party or international organization to carry out its responsibilities under this Part shall entail liability; States Parties or international organizations acting together shall

bear joint and several liability. A State Party shall not however be liable for damage caused by any failure to comply with this Part by a person whom it has sponsored under article 153, paragraph 2(b), if the State Party has taken all necessary and appropriate measures to secure effective compliance under article 153, paragraph 4, and Annex III, article 4, paragraph 4.

"3. States Parties that are members of international organizations shall take appropriate measures to ensure the implementation of this article with respect to such organizations."

516. And, finally, under the Convention on Civil Liability for Oil Pollution Damage Resulting from Exploration for and Exploitation of Sea-Bed Mineral Resources, the operator's liability will be lifted if he proves that the damage resulted from an act of war, hostilities, civil war, insurrection, or a natural phenomenon of an exceptional, inevitable and irresistible character (article 3 (3)). In addition, when the operator proves that the pollution damage resulted wholly or partly either from an act or omission done with intent to cause damage by the person who suffered the damage or from the negligence of that person, the operator may be exonerated wholly or partly from his liability to such person (article 3 (5)). Furthermore, there is no liability for the operator for pollution damage caused by an abandoned well if the operator proves that the incident which caused the damage occurred more than five years after the date on which the well was abandoned under the authority and in accordance with the requirements of the controlling State (article 3 (4)). If the well has been abandoned in other circumstances, the liability of the operator shall be governed by the applicable national law (article 3 (4)). Also, according to article 10 of the Convention, the right to compensation will be extinguished after 12 months from the date on which the injured party knew or reasonably should have known of the damage:

"Rights of compensation under this Convention shall be extinguished unless, within twelve months of the date on which the person suffering the damage knew or ought reasonably to have known of the damage, the claimant has in writing notified the operator of his claim or has brought an action in respect of it. However in no case shall an action be brought after four years from the date of the incident which caused the damage. Where the incident consists of a series of occurrences, the four years' period shall run from the date of the last occurrence."

Bilateral agreements

517. Exoneration from liability has been stipulated in a few bilateral agreements. It has been provided in respect of injuries resulting from activities taking place solely when assisting the other party, or in such circumstances as war, major calamities, etc. ... An agreement between the French and the Spanish Fire Emergency Services 116/ exonerated the party called upon to provide assistance from liability for any injuries it might cause. Article XVIII of the Treaty between Canada and the United States concerning the Columbia River basin 117/ provides that there shall be no liability for injuries resulting from acts or failure to act or omission or delay occurring by reason of war, strikes, major calamity, act of God, uncontrollable force or maintenance curtailment. The article reads:

"Liability for Damage

"1. Canada and the United States of America shall be liable to the other and shall make appropriate compensation to the other in respect of any act, failure to act, omission or delay amounting to a breach of the Treaty or of any of its provisions other than an act, failure to act, omission or delay occurring by reason of war, strike, major calamity, act of God, uncontrollable force or maintenance curtailment.

"2. Except as provided in paragraph (1) neither Canada nor the United States of America shall be liable to the other or to any person in respect of any injury, damage or loss occurring in the territory of the other caused by any act, failure to act, omission or delay under the Treaty whether the injury, damage or loss results from negligence or otherwise."

518. Exoneration from liability for injuries caused directly by an act of war, hostilities, civil war or insurrection has been stipulated in an agreement between Liberia and the Federal Republic of Germany for the use of the former's ports by the latter's nuclear ship. 118/ Article 13 of the Treaty states that "liability for a nuclear damage caused by a nuclear incident ... shall be governed by ... Article VIII ... of the Convention [Convention on the Liability of Operators of Nuclear Ships] ...". Article VIII of that Convention states:

"No liability under this Convention shall attach to an operator in respect to nuclear damage caused by a nuclear incident directly due to an act of war, hostilities, civil war or insurrection."

116/ Convention of Mutual Assistance between French and Spanish Fire Emergency Services (8 February 1973).

117/ Treaty between Canada and the United States of America Relating to Cooperative Development of the Water Resources of the Columbia River Basin (17 January 1961).

118/ Treaty between the Republic of Liberia and the Federal Republic of Germany on the Use of Liberian Waters and Ports by N.S. Otto Hahn (27 May 1970).

519. Article 14 of the Treaty between Liberia and the Federal Republic of Germany establishes a period of 10 years within which claim for compensation should be brought. The article provides:

"Article 14

"(1) Rights of compensation under Article 13 of this Treaty shall be extinguished if an action is not brought within ten years from the date of the nuclear incident.

"(2) Where nuclear damage is caused by nuclear fuel, radioactive products or waste which were stolen, lost, jettisoned, or abandoned, the period established in para. 1 shall also be computed from the date of the nuclear incident causing the nuclear damage, but the period shall in no case exceed a period of twenty years from the date of the theft, loss, jettison or abandonment.

"(3) If the period established in para. (1) and the period established in para. (2) have not been exceeded the rights of compensation under Article 13 of this Treaty shall be subject to a prescription period of three years from the date on which the person who claims to have suffered a nuclear damage had knowledge or ought reasonably to have had knowledge of the damage and of the person liable for the damage."

Judicial decisions and State practice other than agreements

520. Judicial decisions and official correspondence examined in this study do not reveal any incident in which exoneration from liability has been recognized. In a few incidents where the acting State did not pay compensation, the injured State did not appear to have agreed with that behaviour or to have recognized it to be within the right of the acting State. Even in the United States, once nuclear testings which were claimed to be necessary for security reasons caused injuries, the United States Government paid compensation under whatever title, and did not seek to exonerate itself from such payment.

VI. COMPENSATION

521. State practice refers to both the content and the procedure of compensation. Some treaties provide for limitations on compensation (limited liability) for injuries. These treaties relate primarily to activities generally considered as essential to present-day civilization, such as the transport of goods and services by air, land and sea. Secondly, the signatories of such treaties have agreed to tolerate these activities with their potential risk when the injuries are agreed to be compensated. Nevertheless, the damages are at the level which economically does not paralyse the industry nor hinder the further development of these activities. The amount of compensation for injuries caused by those activities is limited. Obviously, this is a deliberate policy decision among the signatories of treaties regulating such activities in the absence of such agreements, judicial decisions do not appear to provide for limitation on compensation. Judicial decisions and official correspondence reviewed in the present study have not uncovered any substantial limitation on the amount of compensation, although some sources indicate that the damages must be "reasonable" and that there is a duty to "mitigate damages".

A. Content

1. Compensable injury

Multilateral agreements

522. Material injuries such as loss of life, personal injury, loss of or damage to property are, under a number of conventions, compensable injuries. Article I of the Vienna Convention on Civil Liability for Nuclear Damage defining nuclear damage provides:

"Article I (1) (k)

"...

"(i) loss of life, any personal injury or any loss of, or damage to, property which arises out of or results from the radioactive properties or a combination of radioactive properties with toxic, explosive or other hazardous properties of nuclear fuel or radioactive products or waste in, or of nuclear material coming from, originating in, or sent to, a nuclear installation;

"...

"(iii) if the law of the Installation State so provides, loss of life, any personal injury or any loss of, or damage to, property which arises out of or results from other ionizing radiation emitted by any other source of radiation inside a nuclear installation."

523. The Additional Convention to the International Convention concerning the Carriage of Passengers and Luggage by Rail (CIV) of 26 February 1961 relating to the liability of railways for death of and personal injury to passengers [(with protocol B) 1 July 1966 - protocol 1, 31 December 1971] provides for the payment of necessary expenses such as medical treatment and transport and compensation for loss due to partial or total incapacity to work and increased expenditure on the injured person's personal requirements necessitated by the injury. In addition, if the passenger dies, compensation is paid for cost of transport of body, burial and cremation. If the dead passenger has a legally enforceable duty to support other individuals and they are deprived of such a support they may be entitled to compensation for their loss. National law governs the right to compensation for those to whom the dead person was providing support on a voluntary basis. Articles 3 and 4 of the Convention provide:

"Article 3

"Damages in case of death of the passenger

"1. In the case of the death of the passenger the damages shall include:

"(a) any necessary expenses following on the death, in particular the cost of transport of the body, burial and cremation;

"(b) if death does not occur at once, the damages defined in Article 4.

"2. If, through the death of the passenger, persons towards whom he had, or would have had in the future, a legally enforceable duty to maintain are deprived of their support, such persons shall also be indemnified for their loss. Rights of action for damages by persons whom the passenger was maintaining without being legally bound to do so shall be governed by national law.

"Article 4

"Damages in case of personal injury to the passenger

"In the case of personal injury or any other bodily or mental harm to the passenger the damages shall include:

"(a) any necessary expenses, in particular the cost of medical treatment and transport;

"(b) compensation for loss due to total or partial incapacity to work, or to increased expenditure on his personal requirements necessitated by the injury."

524. In addition to the "pollution damage", under the Convention on Civil Liability for Oil Pollution Damage Resulting from Exploration for and Exploitation of Seabed Mineral Resources, preventive measures are also compensable (art. 1 (6)).

Preventive measures are defined as "any reasonable measures taken by any person in relation to a particular incident to prevent or minimize pollution damage with the exception of well control measures and measures taken to protect, repair or replace an installation" (art. 1 (7)).

525. Non-material injuries may also be compensable. It is clearly stated in article 5 of the above Convention that under national law compensation may be required for mental, physical pain and suffering and for disfigurement. That article provides:

"Article 5

"Compensation for other injuries

"National law shall determine whether and to what extent the railway shall be bound to pay damages for injuries other than those for which there is provision in Articles 3 and 4, in particular for mental or physical pain and suffering (pretium doloris) and for disfigurement."

526. The Vienna Convention on Civil Liability for Nuclear Damage also provides for losses compensable under the law of the competent court. Hence, when the law of the competent court provides for compensability of non-material injury, they are compensable. Article I (1) (k) (ii) of the Convention provides:

"(ii) any other loss or damage so arising or resulting if and to the extent that the law of the competent court so provides;".

527. A few conventions dealing with nuclear materials have incorporated explicit provisions concerning the damage other than nuclear damage caused by a nuclear incident or jointly by a nuclear incident and other occurrences. To the extent that those injuries are not reasonably separable from nuclear damage, they are considered nuclear damage and consequently compensable under the conventions. For example, article IV of the Vienna Convention on Civil Liability for Nuclear Damage provides:

"Article IV

"...

"4. Whenever both nuclear damage and damages other than nuclear damage have been caused by a nuclear incident or jointly by a nuclear incident and one or more other occurrences, such other damage shall, to the extent that it is not reasonably separable from the nuclear damage, be deemed, for the purposes of this Convention, to be nuclear damage caused by that nuclear incident. Where, however, damage is caused jointly by a nuclear incident covered by this Convention and by an emission of ionizing radiation not covered by it, nothing in this Convention shall limit or otherwise affect the liability, either as regards any person suffering nuclear damage or by way of recourse or contribution, of any person who may be held liable in connection with that emission of ionizing radiation."

528. Article IV of the Convention on the Liability of Operators of Nuclear Ships similarly provides:

"Article IV

"Whenever both nuclear damage and damage other than nuclear damage have been caused by a nuclear incident or jointly by a nuclear incident and one or more other occurrences and the nuclear damage and such other damage are not reasonably separable, the entire damage shall, for the purposes of this Convention, be deemed to be nuclear damage exclusively caused by the nuclear incident. However, where damage is caused jointly by a nuclear incident covered by this Convention and by an emission of ionizing radiation or by an emission of ionizing radiation in combination with the toxic, explosive or other hazardous properties of the source of radiation not covered by it, nothing in this Convention shall limit or otherwise affect the liability, either as regards the victims or by way of recourse or contribution, of any person who may be held liable in connection with the emission of ionizing radiation or by the toxic, explosive or other hazardous properties of the source of radiation not covered by this Convention."

Bilateral agreements

529. The references to compensable injuries in bilateral agreements vary. One agreement enumerates injuries that may be compensated. For example, Finland and Norway, in an agreement regarding the change in the course of their shared river Naatamo, spell out compensable injuries. 1/ Article 2 (c) of the Agreement refers to compensation for any loss of water power and the cost of the clearing operation. These two injuries are material. Article 2 (c) of the Agreement provides:

"(c) The Government of Norway shall compensate the Government of Finland for any loss of water power which may be caused as a result of this Agreement and for the cost of the clearing operations referred to under (b) above, by an over-all payment which has been fixed at 15,000 Norwegian kronor." [Emphasis added.]

1/ Agreement between the Governments of Finland and Norway on the Transfer from the Course of the Näätämo (Neiden) River to the Course of the Gandvik River of Water from the Garsjöen, Kjerringvatn and Förstevannene Lakes (25 April 1951).

530. The Agreement between Poland and the Soviet Union of 1948 concerning their frontier 2/ refers, in paragraph 2 of article 14, to compensation for material damage resulting from the fault of the contracting parties:

> "2. If, through the fault of one Contracting Party material damage is caused to the other Contracting Party as a result of failure to carry out the provisions of paragraph 1 of this article, compensation for such damage shall be paid by the Party responsible therefor." [Emphasis added.]

531. A more general language enumerating compensable injuries is used in the Agreement between the Federal Republic of Germany and Austria concerning the operation of Salzburg Airport. 3/ Paragraph (1) of article 5, in addition to its reference to injuries to persons and property, also mentions injuries to interests. It is not clear what constitutes interests. That paragraph reads:

> "(1) In the event of damage to persons, property or interests resulting in the territory of the Federal Republic of Germany from the effects of airport traffic or of operation of the Salzburg airport and culpably caused, through unlawful conduct, by agents of the Republic of Austria in connexion with their official activities, the Federal Republic of Germany shall be liable in accordance with the laws and regulations governing its liability in respect of its own agents." [Emphasis added.]

532. Another treaty refers to compensation for damage or inconvenience. This is the language of article 13 of chapter VI of an Agreement between Finland and Sweden concerning their frontier, 4/ which provides:

2/ Agreement between the Government of the Polish Republic and the Government of the Union of Soviet Socialist Republics concerning the Régime of the Soviet-Polish Frontier (8 July 1948).

3/ Agreement between the Federal Republic of Germany and the Republic of Austria concerning the Effects on the Territory of the Federal Republic of Germany of the Construction and the Operation of the Salzburg Airport (19 December 1967).

4/ Agreement between Finland and Sweden concerning Frontier Rivers (15 December 1971).

"Where it has been decided that compensation for damage or inconvenience caused by the operations referred to in article 3 is to be paid in a specified annual amount, such decision shall not prevent the Commission from issuing, in connexion with a decision concerning new or amended regulations to combat pollution or if conditions have otherwise changed, such amended regulations as may be required with regard to compensation and the manner in which it is to be paid." [Emphasis added.]

There is nothing in the Agreement to define inconvenience or to clarify whether compensation is limited to material injury or also includes non-material injury. However, within the context of the Agreement, the provision may be interpreted as meaning that damage or inconvenience refers to material ones.

533. Compensation for damage or nuisance is stated in a convention between Norway and Sweden concerning their frontier waters. 5/ Article 6 of the Convention provides:

"With regard to compensation for damage or nuisances resulting from an undertaking, the law of the country in which the damage or nuisance occurs shall apply. With regard to measures for preventing or reducing the damage or nuisance, the law of the country in which the measures are to be carried out shall apply." [Emphasis added.]

Similarly, there is no definition of nuisance in the Convention.

Judicial decisions and State practice other than agreements

534. Judicial decisions and State interactions appear to reveal that only material injuries are compensable. Material injuries here refer to physical, tangible or quantitative injury, as opposed to intangible harm to the dignity of the State. Material injuries which have been compensated in the past include loss of life, personal injury and loss of or damage to property. This has not, however, prevented States from claiming compensation for non-material injuries.

535. In some State practice involving potential and actual nuclear contamination or other damage from nuclear accidents which have caused anxiety, reparation has neither been made nor claimed for non-material injury. The outstanding examples are the Palomares incident and Marshall Islands. The Palomares incident involves a United States B-52G nuclear bomber which collided with a KC-135 tanker during refuelling off the coast of Spain and four plutonium-uranium-235-hydrogen bombs, with a destructive power of L.5 megatons (75 times the power of the Hiroshima bomb), were dropped. 6/ That incident not only created substantial physical

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5/ Convention between Norway and Sweden on Certain Questions relating to the Law on Watercourses (11 May 1921).

6/ For details of the fact, see T. Szuld, The Bombs of Palomares (1967), and Lewis, One of Our H-Bombs is Missing (1967).

damage, but also fostered fear and disturbance in the west Mediterranean basin for two months until the possibility of potential damage was removed. Two of the bombs that fell on land ruptured and discharged their TNT, scattering uranium and plutonium particles near the Spanish coastal village of Palomares and caused imminent danger to the well-being of the inhabitants and the ecology of the area. Immediate remedial action was taken by the United States and Spain and it is reported that the United States buried 1,750 tons of mildly radioactive Spanish soil in the United States. 7/ The third bomb hit the ground intact, but the fourth bomb was lost somewhere in the Mediterranean. After a two-month search by submarines and growing apprehension among the nations of the Mediterranean area, the bomb was located, but was lost during the operation for nine more days. Finally, after 80 days of the threat of detonation of the bomb, the 20-megaton device, with an explosive force of 20 million tons of TNT, was retrieved.

536. Apparently, the United States did not pay any compensation for the apprehension caused by the incident and there was no formal "open discussion" between Spain and the United States about the legal liability. The accident, however, is unique; if the bomb had not been retrieved, the extent of its damage could not have been measured in monetary terms. The United States could not have left the damaging "instrument" caused by its activity in or near Spain and discharged its responsibility by paying compensation.

537. In the atmospheric United States nuclear testings in Eniwetok Atoll in the Marshall Islands, the Japanese Government did not demand compensation for non-material injuries. In a note by the United States Government concerning the payment of damages through a global settlement, the United States Government referred to the final settlement with the Japanese Government for "any and all injuries, losses, or damages arising out of the said nuclear tests". It was left to the Japanese Government to determine which individual injuries deserve compensation:

> "Following nuclear testing on March 1, 1954, at the Eniwetok testing grounds, the Government of Japan announced that injuries from radioactive fallout had been sustained on that date by members of the crew of a Japanese fishing vessel, the Diago Fukuryu Maru, which at the time of the test was outside the danger zone previously defined by the United States. On September 23, 1954, the chief radio operator, Aikichi Kuboyama, of the fishing vessel died. By an Agreement effected by exchange of notes, January 4, 1955, which entered into force the same day, the United States tendered, ex gratia, "as an additional expression of its concern and regret over the injuries sustained" by Japanese fishermen as a result of the nuclear tests in 1954 in the Marshall Islands, the sum of $2 million for purposes of compensation for the injuries or damages sustained, and in full settlement of any and all claims on the part of Japan for any and all injuries, losses, or damages arising out of the said nuclear tests. The sum paid was, under the Agreement, to be distributed in such an equitable manner as might be determined by the Government of Japan and included provision for a solatium on behalf of each of

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7/ "Radioactive Spanish earth is buried 10 feet deep in South Carolina", The New York Times, 12 April 1966, p. 28, col. 3.

the Japanese fishermen involved and for the claims advanced by the Government of Japan for their medical and hospitalization expenses." 8/

538. The Trail Smelter Tribunal rejected the United States suggestion that liquidated damages be imposed on the operator of the smelter whenever emissions exceeded the pre-defined limits, regardless of any injuries it may cause. The Tribunal stated:

> "The Tribunal has carefully considered the suggestions made by the United States for a régime by which a prefixed sum would be due whenever the concentrations recorded would exceed a certain intensity for a certain period of time or a certain greater intensity for any twenty minute period.
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> "It has been unable to adopt this suggestion. In its opinion, and in that of its scientific advisers, such a régime would unduly and unnecessarily hamper the operations of the Trail Smelter and would not constitute a 'solution fair to all parties concerned'." 9/

539. The Tribunal thought only actual injuries incurred deserved compensation.

It may therefore be assumed that the concept of non-material injury has not been accepted in State interactions for activities with extraterritorial injuries. States have not made monetary or material reparation for non-material damage. However, States have demanded reparation for non-material injury. At least in one incident, a State has demanded compensation for violation of its territorial sovereignty. In relation to the crash of Cosmos 954 on Canadian territory, Canada demanded compensation for injuries it suffered as a result of the crash, including for trespassing of the satellite and for violation of its territorial sovereignty. Canada based such a claim on "international precedents". It stated:

> "The intrusion of the Cosmos 954 satellite into Canada's air space and the deposit on Canadian territory of hazardous radioactive debris from the satellite constitutes a violation of Canada's sovereignty. This violation is established by the mere fact of the trespass of the satellite, the harmful consequences of this intrusion, being the damage caused to Canada by the presence of hazardous radioactive debris and the interference with the sovereign right of Canada to determine the acts that will be performed on its territory. International precedents recognize that a violation of sovereignty gives rise to an obligation to pay compensation." 10/

8/ Whiteman, Digest of International Law, vol. 4, p. 565.

9/ United Nations, Reports of International Arbitral Awards, vol. III, p. 1974.

10/ International Legal Materials, vol. 18, p. 907. Emphasis added.

540. In the Trail Smelter Arbitration, in reply to claim for damages by the United States for moral wrong, violation of its territorial sovereignty, the Tribunal held that it lacked jurisdiction. 11/ The Tribunal found it unnecessary to decide whether the facts proven did or did not constitute an infringement or violation of sovereignty of the United States under international law independently of the Convention.

541. State interactions have included instances of potential material damage. This category of practice is parallel to the role of injunction in judicial decisions, such as the Nuclear Tests Case. There can certainly be no material injury prior to the operation of a particular injurious activity. Nevertheless, in a few relevant past practices, it seems that negotiations for securing protective measures have taken place and even that demands for halting the activity have been put forward. The gravity of the potential damage involved is the basis for such demands. The expectations appear to be that States must take reasonable protective measures in order to secure, beyond their territorial sovereignty, the safety and harmlessness of their lawful activity. Of course, the potential harm must be incidental and unintentional; none the less, the potentially injured States have the right to demand that protective measures be taken.

542. State practice regarding liability for reparation of actual damage is more settled. There is more clear acceptance of liability either explicit or implicit in the behaviour of States. States, in a few incidents, have also accepted responsibility for reparation of actual damage caused by activities of private persons in their territorial jurisdiction or under their control. In the river Mura incident between Yugoslavia and Austria 12/ in which, as a result of extensive pollution caused by several Austrian hydro-electric facilities on the international river Mura, Yugoslavia suffered injuries, that country claimed damages for economic loss incurred by two paper mills and by the fisheries, as the result of extensive pollution caused by the Austrian hydro-electric facilities. In the Tanker Juliana incident, the flag State, Liberia, offered 200 million yen to the Japanese fishermen for damage which they suffered as the result of the Juliana running aground and washing its oil ashore. 13/

543. Compensation has been made where an activity occurring in the shared domain has required the relocation of people. In relation to the United States nuclear tests in Eniwetok Atoll, the compensation entailed payment for temporary usage of land and for relocation costs:

> "The permanent transfer elsewhere of the Island people now living on Aomon and Biijiri Islands in Eniwetok Atoll will be necessary. They are not

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11/ United Nations, Reports of International Arbitral Awards, vol. III, p. 1932.

12/ BKA [Federal Chancellery]: GZ 106.454-2a/59; BMfLuF [Federal Ministry of Agriculture and Forestry]: Zl.46.709-iv/9/59.

13/ The Times (London), 2 December 1971, p. 8, col. 1.

now living in their original ancestral homes but in temporary structures provided for them on the two foregoing Islands to which they were moved by United States Forces during the war in the Pacific, after they had scattered throughout the Atoll to avoid being pressed into labor service by the Japanese and for protection against military operations. The sites for the new homes of the local inhabitants will be selected by them. The inhabitants concerned will be reimbursed for lands utilized and will be given every assistance and care in their move to, and re-establishment at their new location. Measures will be taken to insure that none of the inhabitants of the area are subject to danger; also that those few inhabitants who will move will undergo the minimum of inconvenience." 14/

544. The Trail Smelter Tribunal awarded the United States damages in respect of physical damage to cleared land and improvements and uncleared land and improvements for reduction in crops yield and rental value of the land and improvements and, in one instance, for soil impairment. The denial of damages for other injuries, it appears, resulted mainly from failure of proof. With respect to damage to cleared land used for crops, the Tribunal found that damage through reduction in crop yield due to fumigation had occurred in varying degrees during each of the years 1932 to 1936 and found no proof of damage in the year 1937. The properties owned by individual farmers which allegedly suffered damage were divided by the United States into three classes: (a) properties of "farmers residing on their farm"; (b) properties of "farmers who do not reside on their farms"; (ab) properties of "farmers who were driven from their farms"; and (c) properties of large owners of land. The Tribunal adopted that division, and adopted as the measure of indemnity to be applied on account of damage in respect of clear land used for crops the measures of damage which the American Courts apply in cases of nuisance or trespass of the type involved in the case, viz., the amount of reduction in the value of use or rental value of the land caused by the fumigations. 15/

545. The Tribunal found that in the case of farm land, such reduction in the value of the use was, in general, the amount of the reduction of the crop yield arising from injury to crops, less cost of marketing the same. 16/ In the opinion of the Tribunal, the failure of farmers to increase their seeded land in proportion to such increase in other localities may also be taken into consideration. This is an example of the duty to mitigate the injury.

546. In relation to the problems of abandonment of properties by their owners, it was noted by the Tribunal that practically all of such properties listed appeared to have been abandoned prior to the year 1932. In order to deal with that problem as well as that arising out of failure of farmers to increase their seeded land,

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14/ Whiteman, Digest of International Law, vol. 4, p. 555.

15/ United Nations, Reports of International Arbitral Awards, vol. III, p. 1924.

16/ Ibid., p. 1925.

the Tribunal decided to estimate injuries on the basis of the statistical data available, the average acreage on which it was reasonable to believe that crops would have been seeded and harvested during the period under consideration but for the fumigations. 16/

547. In addition, the Tribunal found that there may be special damage for which indemnity should be awarded by reason of impairment of the soil contents through increased acidity caused by sulphur dioxide content of the streams and other waters. Evidence in support of that contention was submitted to the Tribunal. 16/ The Tribunal found that evidence, however, did not prove such a condition, with the exception of one small area. The Tribunal also awarded indemnity for reduction in the value of those farms in the vicinity of the boundary line because of the location of the farmers in respect to the fumigations. 17/

548. With respect to damage to growing and reproduction of timber claimed to have been caused by the fumes, the Tribunal adopted the measure of damages applied in United States courts, i.e. the reduction in value of the land itself due to such destruction and impairment:

> "(b) With regard to damage due to destruction and impairment of growing timber (not of merchantable size), the Tribunal has adopted the measure of damages applied by American courts, viz., the reduction in value of the land itself due to such destruction and impairment. Growing timberland has a value for firewood, fences, etc., as well as a value as a source of future merchantable timber. No evidence has been presented by the United States as to the locations or as to the total amounts of such growing timber existing on January 1, 1932, or as to its distribution into types of conifers - yellow pine, Douglas fir, larch or other trees. While some destruction or impairment, deterioration, and retardation of such growing timber has undoubtedly occurred since such date, it is impossible to estimate with any degree of accuracy the amount of damage. The Tribunal has, however, taken such damage into consideration in awarding indemnity for damage to land containing growing timber.
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> "(c) With respect to damage due to the alleged lack of reproduction, the Tribunal has carefully considered the contentions presented. The contention made by the United States that fumigation prevents germination of seed is, in the opinion of the Tribunal, not sustained by the evidence. Although the experiments were far from conclusive, Hedgcock's studies tend to show, on the contrary, that, while seedlings were injured after germination owing to drought or to fumes, the actual germination did take place.
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> "With regard to the contention made by the United States of damage due to failure of trees to produce seed as a result of fumigation, the Tribunal is of opinion that it is not proved that fumigation prevents trees from producing sufficient seeds, except in so far as the parent-trees may be destroyed or

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17/ Ibid., p. 1926.

deteriorated themselves. This view is confirmed by the Hedgcock studies on cone production of yellow pine. There is a rather striking correlation between the percentage of good, fair, and poor trees found in the Hedgcock Census studies and the percentages of trees bearing a normal amount of cones, trees bearing few cones, and trees bearing no cones in the Hedgcock cone production studies. In so far, however, as lack of cone production since January 1, 1932, is due to death or impairment of the parent-trees occurring before that date, the Tribunal is of opinion that such failure of reproduction both was caused and occurred prior to January 1, 1932, with one possible exception as follows: From standard American writings on forestry, it appears that seeds of Douglas fir and yellow pine rarely germinate more than one year after they are shed, but if a tree was killed by fumigation in 1931, germination from its seeds might occur in 1932. It appears, however, that Douglas fir and yellow pine only produce a good crop of seeds once in a number of years. Hence, the Tribunal concludes that the loss of possible reproduction from seeds which might have been produced by trees destroyed by fumigation in 1931 is too speculative a matter to justify any award of indemnity.

"It is fairly obvious from the evidence produced by both sides that there is a general lack of reproduction of both yellow pine and Douglas fir over a fairly large area, and this is certainly due to some extent to fumigations. But, with the data at hand, it is impossible to ascertain to what extent this lack of reproduction is due to fumigations or to other causes such as fires occurring repeatedly in the same area or destruction by logging of the cone-bearing trees. It is further impossible to ascertain to what extent lack of reproduction due to fumigations can be traced to mortality or deterioration of the parent-trees which occurred since the first of January, 1932. It may be stated, in general terms, that the loss of reproduction due to the forest being depleted will only become effective when the amount of these trees per acre falls below a certain minimum. But the data at hand do not enable the Tribunal to say where and to what extent a depletion below this minimum occurred through fumigations in the years under consideration. An even approximate appraisal of the damage is further complicated by the fact that there is evidence of reproduction of lodgepole pine, cedar, and larch, even close to the boundary and in the Columbia River Valley, at least in some locations. This substitution may not be due entirely to fumigations, as it appears from standard American works on conifers that reproduction of yellow pine is often patchy; that when yellow pine is substantially destroyed in a given area, it is generally supplanted by another species of trees; and that lodgepole pine in particular has a tendency to invade and take full possession of yellow pine territory when a fire has occurred. While the other species are inferior, their reproduction is, nevertheless, a factor which has to be taken into account; but here again quantitative data are entirely lacking. It is further to be noted that the amount of rainfall is an important factor in the reproduction of yellow pine, and that where the normal annual rainfall is but little more than eighteen inches, yellow pine does not appear to thrive. It appears in evidence that the annual precipitation at Northport, in a period of fourteen years from 1923 to 1936, averaged slightly below seventeen inches. With all these considerations in mind, the Tribunal has, however,

taken lack of reproduction into account to some extent in awarding indemnity for damage to uncleared land in use for timber.

"On the basis of the foregoing statements as to damage and as to indemnity for damage with respect to cleared land and uncleared land, the Tribunal has awarded with respect to damage to cleared land and to uncleared land (other than uncleared land used for timber), an indemnity of sixty-two thousand dollars ($62,000); and with respect to damage to uncleared land used for timber an indemnity of sixteen thousand dollars ($16,000) - being a total indemnity of seventy-eight thousand dollars ($78,000). Such indemnity is for the period from January 1, 1932 to October 1, 1937.

"There remain for consideration three other items of damage claimed in the United States Statement: (Item c) 'Damages in respect of livestock'; (Item d) 'Damages in respect of property in the town of Northport'; (Item g) 'Damages in respect of business enterprises'." 18/

549. The United States failed to prove damage in respect of livestock:

"(3) With regard to 'damages in respect of livestock', claimed by the United States, the Tribunal is of opinion that the United States has failed to prove that the presence of fumes from the Trail Smelter has injured either the livestock or the milk or wool productivity of livestock since January 1, 1932, through impaired quality of crop or grazing. So far as the injury to livestock is due to reduced yield of crop or grazing, the injury to livestock is due to reduced yield of crop or grazing, the injury is compensated for in the indemnity which is awarded herein for such reduction of yield." 19/

550. Also, proof of damage to property in the town of Northport was insufficient:

"(4) With regard to 'damages in respect of property in the town of Northport', the same principles of law apply to assessment of indemnity to owners of urban land as apply to owners of farm and other cleared land, namely, that the measure of damage is the reduction in the value of the use or rental value of the property, due to fumigations. The Tribunal is of opinion that there is no proof of damage to such urban property; that even if there were such damage, there is no proof of facts sufficient to enable the Tribunal to estimate the reduction in the value of the use or rental value of such property; and that it cannot adopt the method contended for by the United States of calculating damages to urban property." 19/

551. With regard to damages in respect of business enterprises, the United States claimed that the businessmen had suffered loss of business and impairment of the value of good will because of the reduced economic status of the residents of the

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18/ Ibid., pp. 1929-1931.

19/ Ibid., p. 1931.

damaged area. The Tribunal found that such damage was too indirect, remote and uncertain to be appraised and not such for which an indemnity can be awarded. In the opinion of the Tribunal, the argument that indemnity should be obtained for an injury to or reduction in a man's business due to the inability of his customers or clients to buy - which inability or impoverishment was caused by a nuisance, even if proved - was too indirect and remote to become the basis, in law, for an award of indemnity. 19/

552. Pollution of water-ways was not proved 20/ and, since the Tribunal considered itself bound by the terms of the Convention, it did not consider the question posed by the United States requesting indemnity for money expended for the investigation it undertook because of the problems the Trail Smelter created. This question was posed by the United States under the claim for violation of sovereignty. 20/ The Tribunal, however, appeared to recognize the possibility of granting indemnity for the expenses of processing the claims. It agreed that in some cases of international arbitration, damages were awarded for expenses not as compensation for violation of territorial sovereignty, but as compensation for expenses incurred by individual claimants in prosecuting their claims for wrongful acts by the offending Government. 21/ The Tribunal appeared to have difficulties, not so much with the content of the claim as with its characterization as damage for violation of territorial sovereignty. It therefore decided that "neither as a separable item of damage nor as an incident to other damage should any award be made for that which the United States terms 'violation of sovereignty'". 22/

553. In the resolution of the Alabama Claims, the Tribunal awarded damages in respect of net freights lost and other undefined damage resulting from Britain's failure to exercise "due diligence". However, damages in respect of the costs of pursuit of the confederate cruisers outfitted in British ports were denied because such costs could not be distinguished from the ordinary expenses of the war, as were damages in respect of prospective earnings since they depend on future and uncertain contingencies. 23/

554. The Canadian claims against the Soviet Union for injuries resulting from the crash of a nuclear-powered satellite on Canadian territory included the duty to mitigate damages:

> "17. Under general principles of international law, Canada had a duty to take the necessary measures to prevent and reduce the harmful consequences of the damage and thereby to mitigate damages. Thus, with respect to the debris, it was necessary for Canada to undertake without delay operations of search,

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20/ Ibid., pp. 1931-1932.

21/ Ibid., p. 1932-1933.

22/ Ibid., p. 1933.

23/ J. B. Moore, International Arbitrations, vol. I, p. 658.

recovery, removal, testing and clean-up. These operations were also carried out in order to comply with the requirements of the domestic law of Canada. Moreover, Article VI of the Convention imposes on the claimant State a duty to observe reasonable standards of care with respect to damage caused by a space object." 24/

555. The Canadian claim also indicated that compensation sought was reasonable, proximately caused by the accident and capable of being calculated with a reasonable degree of certainty:

"23. In calculating the compensation claimed, Canada has applied the relevant criteria established by general principles of international law according to which fair compensation is to be paid, by including in its claim only those costs that are reasonable, proximately caused by the intrusion of the satellite and deposit of debris and capable of being calculated with a reasonable degree of certainty." 25/

556. The Atlantic Richfield Company (ARCO), which operated the refinery at Ferndale, Washington, the site of the 1972 Cherry Point oil spill, paid an initial clean-up bill of $19,000 submitted by the municipality of Surrey for its activities. ARCO later agreed to pay another $11,606.50, to be transmitted by the United States to the Canadian Government for its costs incurred in connection with the clean-up operation, but did not consent to provide reimbursement for an additional item of $60 designated "bird loss (30 birds at $2 a bird)". This was done "without admitting any liability in the matter and without prejudice to its rights and legal position". 26/

24/ International Legal Materials, vol. 18, pp. 905-906.

25/ Ibid., p. 907.

26/ Canadian Yearbook of International Law, vol. 11 (1973), pp. 333-334; Montreal Star, 9 June 1972.

2. Forms of compensation

557. In inter-State relationships, compensation for extraterritorial damage caused by activities conducted within the territorial jurisdiction or control of States has been paid either in the form of a lump sum to the injured State to pay off individual claims, or directly to individual claimants. Forms of comparison in inter-State relationships appear similar to those in domestic law. Indeed, some conventions provide that national laws are to govern the question of compensation. When damages are monetary, efforts have been made to choose the currency which is easily transferable.

Multilateral agreements

558. While references to the forms of compensation have been made in multilateral conventions, they are not sufficiently detailed. Attempts have been made in the conventions to make the compensation useful to the injured party in terms of currency and of transferability of the sums from one State to another. Under the Convention on Third Party Liability for Nuclear Energy, for example, the nature, the form and the extent of the compensation as well as its equitable distribution is to be governed by national law. Furthermore, the compensation shall be freely transferable between the contracting parties. The relevant provisions of the Convention are:

"Article 7

"...

"(g) Any interest and costs awarded by a court in actions for compensation under this Convention shall not be considered to be compensation for the purpose of this Convention and shall be payable by the operator in addition to any sum for which he is liable in accordance with this article."

"Article 11

"The nature, form and extent of the compensation, within the limits of this Convention, as well as the equitable distribution thereof, shall be governed by national law.

"Article 12

"Compensation payable under this Convention, insurance and reinsurance premiums, sums provided as insurance, reinsurance, or other financial security required pursuant to Article 10, and interest and costs referred to in Article 7 (g), shall be freely transferable between the monetary areas of the Contracting Parties.

559. The Additional Convention to the International Convention concerning the Carriage of Passengers and Luggage by Rail (CIV) of 26 February 1961 relating to the liability of railways for death of and personal injury to passengers also provides that for certain injuries compensation may be awarded in the form of a

lump sum. However, if national law permits, payment of an annuity or, if the injured passenger so requested, compensation, shall be awarded as an annuity. Such forms of damages are also provided for injuries suffered by others whom the dead passenger was legally responsible to support, as well as for medical treatment and transport of the injured passenger and for loss due to the passenger's total or partial incapacity to work. The relevant provisions of the Convention provide:

"Article 6

"1. The damages under Article 3 (2) and Article 4 (b) shall be awarded in the form of a lump sum; however, if national law permits payment of an annuity, damages shall be awarded in this form if so requested by the injured passenger or the claimants designated in Article 3 (2)."

"Article 9

"Interest and refund of compensation

"The claimant shall be entitled to claim interest on compensation which shall be calculated at the rate of 5 per cent per annum. Such interest shall accrue from the date of the claim, or, if a claim has not been made, from the date on which legal proceedings are instituted, save that for compensation due under Articles 3 and 4, interest shall accrue only from the day on which the events relevant to its assessment occurred, if that day is later than the date of the claim or the date on which legal proceedings were instituted.

"2. Any compensation improperly obtained shall be refunded."

560. The Convention on the Liability of Operators of Nuclear Ships states the value in gold of the franc, the currency in which compensation may be paid. It also provides that the awards may be converted into each national currency in round figures and that conversion into national currencies other than gold shall be effected on the basis of their gold value. Paragraph 4 of article III of the Convention reads:

"4. The franc mentioned in paragraph 1 of this Article is a unit of account constituted by sixty-five and one half milligrams of gold of millesimal fineness nine hundred. The amount awarded may be converted into each national currency in round figures. Conversion into national currencies other than gold shall be effected on the basis of their gold value at the date of payment."

561. If agreed between the concerned parties, compensation under the Convention on International Liability for Damage Caused by Space Objects will be paid in any currency. Otherwise, the compensation shall be paid in the currency of the claimant State. If the claimant State agrees, the compensation may be paid in the currency of the State from which compensation is due. Article XIII of the Convention provides:

"Unless the claimant State and the State from which compensation is due under this Convention agree on another form of compensation, the compensation shall be paid in the currency of the claimant State or, if that State so requests, in the currency of the State from which compensation is due."

Bilateral agreements

562. Most bilateral agreements regarding activities likely to result in extraterritorial injuries have been silent on the forms of compensation. The decision on forms of compensation appears to have been left to the appropriate decision maker under individual treaties, either local courts, joint commissions or government authorities. In at least two bilateral agreements references have been made regarding the forms of compensation.

563. In an Agreement between Ireland and the United States 27/ regarding the use of the former's ports by the latter's nuclear ship, the United States Government agreed to provide prompt payment in respect of its liability for nuclear damage under the treaty. Paragraph (5) of the Agreement provides:

"(5) The Government of the United States shall ensure that prompt payment is made in respect of the liability referred to in paragraph (1) of this Agreement." [Emphasis added.]

564. Under the frontier treaty between Finland and Sweden, 28/ compensation is to be paid in a specific annual amount. Article 13 of chapter VI of the Agreement provides:

"Where it has been decided that compensation for damage or inconvenience caused by the operations referred to in article 3 is to be paid in a specified annual amount, such decision shall not prevent the Commission from issuing in connexion with a decision concerning new or amended regulations to combat pollution or if conditions have otherwise changed, such amended regulations as may be required with regard to compensation and the manner in which it is to be paid." [Emphasis added.]

Judicial decisions and State practice other than agreements

565. The judicial decisions and official correspondence surveyed in the present study have not made any reference to these aspects of compensation, except in a few cases such as the compensation afforded Japan by the United States for injuries arising out of the Pacific nuclear tests and the compensation required of the United Kingdom to be made for the Alabama Claims. In both incidents, lump sum

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27/ Exchange of notes constituting an agreement relating to public liability for damage caused by the N.S. Savannah (18 June 1964).

28/ Agreement between Finland and Sweden concerning Frontier Rivers (15 December 1971).

payment was to be made in order to allow the injured States to pay equitable compensation to the injured individuals. 29/

566. In addition to monetary compensation, compensation has occasionally been in the form of removing the danger or restitutio in integrum. This was, for example, the case in the Palomares incident, a drop of nuclear bombs in and near Spain due to a collision between a United States nuclear plane and a tanker. In situations where the damage or the danger of damage is so grave, the primary compensation is in restitution, removing the damaging instrument and restoring the area to its normal condition prior to the incident. The United States removed the danger from Spain by retrieving the bombs and by burying Spanish contaminated soil in its own territory. 30/

567. In the nuclear tests in the Marshall Islands, the United States was also reported to have spent almost $110 million to clean up several of the Eniwetok Islands so they could be resettled. As part of that project, however, one island in Atoll Runit was used as the dumping ground for nuclear debris and declared off-limits for 20,000 years. 31/ The clean-up operation is not restitution, but the intentions of the parties and the policy behind it are similar to those of restitution. In one incident, the River Mura, in addition to monetary compensation for injuries caused to fishing resources and paper mills in Yugoslavia, Austria also delivered a certain quantity of paper to Yugoslavia.

29/ J. B. Moore, International Arbitrations, vol. I, p. 658; Whiteman, Digest of International Law, vol. 4, p. 565.

30/ The New York Times, 12 April 1966, p. 28, col. 3.

31/ International Herald Tribune, 15 June 1982, p. 5, col. 2.

3. Limitation on compensation

568. Similar to domestic law, State practice has provided for limitations on compensation. This is particularly relevant to activities which, although important to present-day civilization, are most likely to cause injuries, as well as to activities with risk of devastating injuries such as the use of nuclear materials. The provisions on limitation of compensation appear to have been carefully designed to fulfil two objectives: to protect industries from unlimited compensation which financially paralyzes their existence and discourages their future development, and to provide reasonable and fair compensation to those who suffer injuries as the result of the operation of those activities.

Multilateral agreements

569. The Convention on Third Party Liability in the Field of Nuclear Energy is drafted to deal systematically and uniformly only with the question of liability and compensation in the field of nuclear energy. The preamble of the Convention specifically expresses the desire of the signatories in "ensuring adequate and equitable compensation for persons who suffer damage caused by nuclear incidents while taking the necessary steps to ensure that development of the production and uses of nuclear energy for peaceful purposes is not thereby hindered" (emphasis added). Article 7 of the Convention provides the minimum and maximum amount of compensation:

"Article 7

"(a) The aggregate of compensation required to be paid in respect of damage caused by a nuclear incident shall not exceed the maximum liability established in accordance with this article.

"(b) The maximum liability of the operator in respect of damage caused by a nuclear incident shall be 15,000,000 European Monetary Agreement units of account as defined at the date of this Convention (hereinafter referred to as 'units of account'): provided that any Contracting Party, taking into account the possibilities for the operator of obtaining the insurance or other financial security required pursuant to Article 10, may establish by legislation a greater or less amount, but in no event less than 5,000,000 units of account. The sums mentioned above may be converted into national currency in round figures.

"(c) Any Contracting Party may by legislation provide that the exception in Article 3(b)(ii) shall not apply: provided that, in no case, shall the inclusion of damage to the means of transport result in reducing the liability of the operator in respect of other damage to an amount less than 5,000,000 units of account.

"(d) The amount of the liability of operators of nuclear installations in the territory of a Contracting Party established in accordance with paragraph (b) of this article as well as the provisions of any legislation of a Contracting Party pursuant to paragraph (c) of this article shall apply to the liability of such operators wherever the nuclear incident occurs.

"(e) A Contracting Party may subject the transit of nuclear substances through its territory to the condition that the maximum amount of liability of the foreign operator concerned be increased, if it considers that such amount does not adequately cover the risks of a nuclear incident in the course of the transit: provided that the maximum amount thus increased shall not exceed the maximum amount of liability of operators of nuclear installations situated in its territory.

"(f) The provisions of paragraph (e) of this article shall not apply

"(i) to carriage by sea where, under international law, there is a right of entry in cases of urgent distress into the ports of such Contracting Party or a right of innocent passage through its territory; or

"(ii) to carriage by air where, by agreement or under international law, there is a right to fly over or land on the territory of such Contracting Party."

570. Under the Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface, if the total amount of claims established exceeds the limit of liability, in respect of claims exclusively for loss of life or personal injury or exclusively for damage to property, they shall be reduced in proportion to their respective amounts. But if claims are both in respect of loss of life or personal injury and damage to property, one half of the total sum shall be allocated for loss of life or personal injury proportionately between the claims concerned. The remainder shall be distributed proportionately among the claims in respect of damage to property and the portion not already covered of the claims in respect of loss of life and personal injury. Article 14 of the Convention provides:

"Article 14

"If the total amount of the claims established exceeds the limit of liability applicable under the provisions of this Convention, the following rules shall apply, taking into account the provisions of paragraph 2 of Article 11:

"(a) If the claims are exclusively in respect of loss of life or personal injury or exclusively in respect of damage to property, such claims shall be reduced in proportion to their respective amounts.

"(b) If the claims are both in respect of loss of life or personal injury and in respect of damage to property, one half of the total sum distributable shall be appropriated preferentially to meet claims in respect of loss of life and personal injury and, if insufficient, shall be distributed proportionately between the claims concerned. The remainder of the total sum distributable shall be distributed proportionately among the claims in respect of damage to property and the portion not already covered of the claims in respect of loss of life and personal injury."

571. The Additional Convention to the International Convention concerning the Carriage of Passengers and Luggage by Rail (CIV) of 26 February 1961 relating to the liability of railways for death of and personal injury to passengers provides for limitation of liability. But when the damage is caused as the result of wilful misconduct or gross negligence of the railway, it removes the limitation of liability. Articles 7 and 8 provide:

"Article 7

"Limit of damages in case of damage to or loss of articles

"When, under the provisions of this Convention, the railway is liable to pay damages for damage to, or for total or partial loss of any articles which the passenger who has sustained an accident had either on him or with him as hand luggage, including any animals which he had with him, compensation for the damage may be claimed up to the sum of 2,000 francs per passenger.

"Article 8

"Amount of damages in case of wilful misconduct or gross negligence

"The provisions of Articles 6 and 7 of this Convention or those of the national law which limit compensation to a fixed amount shall not apply if the damage results from wilful misconduct or gross negligence of the railway."

572. Article 10 of the Convention nullifies any agreement between passengers and the railway in which the liability of the railway is precluded or has been limited to a lower amount than that provided in the Convention. Articles 10 and 12 provide:

"Article 10

"Prohibition of limitation of liability

"Any terms or conditions of carriage or special agreements concluded between the railway and the passenger which purport to exempt the railway in advance, either totally or partially, from liability under this Convention, or which have the effect of reversing the burden of proof resting on the railway, or which provide for limits lower than those laid down in Article 6(2) and article 7, shall be null and void. Such nullity shall not, however, avoid the contract of carriage which shall remain subject to the provisions of CIV and this Convention."

"Article 12

"Bringing of actions not within the provisions of this Convention

"No action of any kind shall be brought against a railway in respect of its liability under Article 2(1) of this Convention, except subject to the conditions and limitations laid down in this Convention.

"The same shall apply to any action brought against persons for whom the railway is liable under Article 11."

573. The International Convention Relating to the Limitation of the Liability of Owners of Sea-going Ships is basically designed for limited liability and compensation of the sea-going ships. The preamble of the Convention clearly stipulates the policy decision by the signatories on the desirability of the limitation of the liability of such ships. It provides:

"The High Contracting Parties,

"Having recognized the desirability of determining by agreement certain uniform rules relating to the limitation of liability of owners of sea-going ships;

"Having decided to conclude a Convention for this purpose, ..."

574. Article 1 of the Convention provides:

"(1) The owner of a sea-going ship may limit his liability in accordance with Article 3 of this Convention in respect of claims arising from any of the following occurrences, unless the occurrence giving rise to the claim resulted from the actual fault or privity of the owner:

"(a) loss of life of, or personal injury to, any person being carried in the ship, and loss of, or damage to, any property on board the ship;

"(b) loss of life of, or personal injury to, any other person, whether on land or on water, loss of or damage to any other property or infringement of any rights caused by the act, neglect or default of any person on board the ship for whose act, neglect or default the owner is responsible or any person not on board the ship for whose act, neglect or default the owner is responsible: Provided however that in regard to the act, neglect or default of this last class of person, the owner shall only be entitled to limit his liability when the act, neglect or default is one which occurs in the navigation or the management of the ship or in the loading, carriage or discharge of its cargo or in the embarkation, carriage or disembarkation of its passengers;

"(c) any obligation or liability imposed by any law relating to the removal of wreck and arising from or in connection with the raising, removal or destruction of any ship which is sunk, stranded or abandoned (including anything which may be on board such ship) and any obligation or liability arising out of damage caused to harbour works, basins and navigable waterways.

"(2) In the present Convention the expression 'personal claims' means claims resulting from loss of life and personal injury; the expression 'property claims' means all other claims set out in paragraph (1) of this Article.

"..."

Under paragraph 3 of article 1, the limitation of liability of the sea-going ship will cease if the injury is caused by negligence of the shipowner, or of persons for whose conduct he is responsible. The question of who has the burden to prove whether there has been a fault, under the Convention, is to be determined by the law of forum. Paragraph 6 of article 1 provides:

"(6) The question upon whom lies the burden of proving whether or not the occurrence giving rise to the claim resulted from the actual fault or privity of the owner shall be determined by the lex fori."

If the master or the member of the crew becomes a defendant in a lawsuit, his liability is still limited even if the accident causing injury has been the result of his fault. But if the master or the member of the crew is at the same time the owner, co-owner, charter manager or operator of the sea-going ship, the limitation of liability applies only when the act of neglect or default is committed by the above persons in their capacity as master or member of the crew. Paragraph 3 of article 6 provides:

"(3) When actions are brought against the master or against members of the crew such persons may limit their liability even if the occurrence which gives rise to the claims resulted from the actual fault or privity of one or more of such persons. If, however, the master or member of the crew is at the same time the owner, co-owner, charterer, manager or operator of the ship the provisions of this paragraph shall only apply where the act, neglect or default in question is an act, neglect or default committed by the person in question in his capacity as master or as member of the crew of the ships."

575. The liability of operator is limited under article 6 of the Convention on Civil Liability for Oil Pollution Damage Resulting from Exploration for and Exploitation of Seabed Mineral Resources. Paragraphs 1, 2 and 3 of article 6 provide:

"1. The operator shall be entitled to limit his liability under this Convention for each installation and each incident to the amount of 30 million Special Drawing Rights until five years have elapsed from the date on which the Convention is opened for signature and to the amount of 40 million Special Drawing Rights thereafter.

"2. Where operators of different installations are liable in accordance with paragraph 1 of Article 5, the liability of the operator of any one installation shall not for any one incident exceed any limit which may be applicable to him in accordance with the provisions of this Article and of Article 15.

"3. Where in the case of any one installation more than one operator is liable under this Convention, the aggregate liability of all of them in respect of any one incident shall not exceed the highest amount that could be awarded against any of them, but none of them shall be liable for an amount in excess of the limit applicable to him."

576. The operator will lose the benefit of the limitation on his liability if it is proved that "the pollution damage occurred as a result of an act or omission by the operator himself, done deliberately with knowledge that pollution damage would result" (art. 6 (4)). This paragraph requires the existence of two elements for removing the limitation on liability. One is act or omission done by the operator and the second is the deliberate act or omission with actual knowledge that pollution damage would result. Hence negligence by the operator does not, under this Convention, remove limitation on the liability.

Bilateral agreements

577. Although in most bilateral agreements regarding activities involving extraterritorial injurious consequences there appears to be no limitations on liability, a few bilateral agreements have included provisions on that question. These agreements are all related to the use of ports of host States by nuclear ships of other States. In an agreement between the United States and the Netherlands regarding the use of the Netherlands' ports by the USNS Savannah 32/ the liability of the United States is limited to $500 million. Article 4 of the Agreement provides:

"It is agreed that the aggregate liability of the United States arising out of a single nuclear incident involving the N.S. Savannah, regardless of where damage may be suffered, shall not exceed $500 million."

578. Similarly, in two agreements between the United States and Italy regarding the Savannah 33/ limitation on liability is set, in accordance with the United States

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32/ Agreement on Public Liability for Damage Caused by the N.S. Savannah (6 February 1963).

33/ Agreement between the Government of the United States of America and the Government of Italy on the Use of Italian Ports by the N.S. Savannah (23 November 1964). Article VIII of the Agreement provides:

"Article VIII

"Liability for Damage

"Within the limitations of liability set by United States Public Law 85-256 (annex "A"), as amended by 85-602 (annex "B"), in any legal action or proceeding brought in personam against the United States in an Italian court, the United States Government will pay compensation for any responsibility

Public Law 85-256 as amended by 85-602, at $500 million. In a similar agreement with Ireland, 34/ the United States accepted a liability limited to $500 million for nuclear damage its nuclear ship Savannah may cause in Irish territory.

579. A DM 400 million limitation on liability was also put on compensation for damage caused as a result of a visit by the Federal Republic of Germany's nuclear ship to Liberian ports. Article 13 of an agreement 35/ between the two countries provides:

> "Liability for a nuclear damage caused by a nuclear incident involving the nuclear fuel of, or radioactive products or waste produced in the Ship shall be governed by Article II, Para. 1 of Article III, Article IV, Article VIII and paras. 1 and 2 of Article X of the Convention as well as by the following Articles of this Treaty, provided, however, that the liability mentioned in para. 1 of Article III of the Convention shall be limited to DM 400 million (four hundred million)."

(continued)

> which an Italian court may find, according to Italian law, for any damage to people or goods deriving from a nuclear incident in connection with, arising out of or resulting from the operation, repair, maintenance or use of the Ship, in which the N.S. Savannah may be involved wihin Italian territorial waters, or outside of them on a voyage to or from Italian ports if damage is caused in Italy or on ships of Italian registry.

Exchange of notes constituting an agreement between the United States of America and Italy concerning liability during private operation of NS Savannah (16 December 1965). A relevant paragraph of the Agreement provides:

> "Within the limitation of liability set by United States Public Law ... [$500 million] ... the United States Government will provide compensation ..."

34/ Exchange of notes constituting an agreement between the United States of America and Ireland relating to public liability for damage caused by the NS Savannah (18 June 1964); paragraph (2) of the Agreement states:

> "(2) The aggregate liability of the United States Government in accordance with paragraph (1) of this agreement shall not exceed $500 million for any single incident regardless of where damage may be incurred."

See also paragraph (7) of the Agreement.

35/ Treaty between the Republic of Liberia and the Federal Republic of Germany on the Use of Liberian Ports by N.S. Otto Hahn (27 May 1970).

Article 17 of the same Treaty, however, provides that the provisions of national legislation and international conventions on limitation of ship-owners' liability do not apply to nuclear damage under that Treaty:

"Article 17

"The provisions of national legislation or international conventions on the limitation of shipowners' liability shall not apply to claims established under Article 13 of this Treaty."

Judicial decisions and State practice other than agreements

580. Judicial decisions and official correspondence surveyed in the present study did not reveal any limitation on compensation outside that agreed upon by treaties. Some references have been made to equitable, fair and adequate compensation. By a broad interpretation, limitation on compensation may sometimes be compatible with equitable and fair compensation.

B. Competent authorites for awarding compensation

581. Article 33 of the Charter of the United Nations provides a wide choice of peaceful modes of dispute settlement from the most informal to the most formal:

> "1. The parties to any dispute, the continuance of which is likely to endanger the maintenance of international peace and security, shall, first of all, seek a solution by negotiation, enquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements, or other peaceful means of their own choice.
>
> "2. The Security Council shall, when it deems necessary, call upon the parties to settle their disputes by such means."

582. State practice surveyed in the present study reveals that these modes of dispute settlement have been utilized to resolve questions of liability and compensation relating to acts with extraterritorial injurious consequences. International courts, arbitral tribunals, joint commissions as well as domestic courts have decided on those questions. Generally, on the basis of prior agreements among States, the Permanent Court of International Justice, the International Court of Justice and arbitral tribunals have dealt with disputes relating to the utilization of and the activities within the continental shelf, the territorial sea, etc. When there have been ongoing activities, usually among neighbouring States, such as the use of shared waters, for which there are established institutions constituted by States, claims arising from those activities have normally been referred to the joint institution or commission concerned.

1. Local courts and authorities

Multilateral agreements

583. A number of multilateral agreements refer to local courts and authorities as competent authorities to decide on questions of liability and compensation. It appears that in relation to activities, primarily of commercial nature, in which the actors are private entities and the primary liability is that of the operator, local courts have been recognized as appropriate decision makers. For example, the Convention on Third Party Liability in the Field of Nuclear Energy confers jurisdiction only on the courts of the contracting State in whose territory the nuclear installation of the liable operator is located. When the nuclear incident occurs during transportation, unless as otherwise provided, the local courts of the

contracting State in whose territory the nuclear substances involved at the time of the incident are competent authorities. Article 13 of the Convention provides a detailed division of jurisdiction among domestic courts of the contracting parties, in relation to the place of the occurrence of the nuclear incident:

"Article 13

"(a) Jurisdiction over actions under Article 3, 6(a), 6(c) and 6(d) shall lie only with the courts competent in accordance with the legislation of the Contracting Party in whose territory the nuclear installation of the operator liable is situated.

"(b) In the case of a nuclear incident occurring in the course of carriage, jurisdiction shall, except as otherwise provided in paragraph (c) of this article, lie only with the courts competent in accordance with the legislation of the Contracting Party in whose territory the nuclear substances involved were at the time of the nuclear incident.

"(c) If a nuclear incident occurs outside the territory of the Contracting Parties in the course of carriage, or if the place where the nuclear substances involved were at the time of the nuclear incident cannot be determined, or if the nuclear substances involved were in territory under the jurisdiction of more than one Contracting Party at the time of the nuclear incident, jurisdiction shall lie only with the courts competent in accordance with the legislation of the Contracting Party in whose territory the nuclear installation of the operator liable is situated.

"(d) Where jurisdiction would lie with the courts of more than one Contracting Party by virtue of paragraphs (a) or (c) of this article, jurisdiction shall lie,

"(i) in the case of a nuclear incident occurring in the course of carriage of nuclear substances,

"(1) with the courts competent in accordance with the legislation of the Contracting Party at the place in its territory where the means of transport upon which the nuclear substances involved were at the time of the nuclear incident is registered, provided that they are competent under paragraph (c) of this article; or

"(2) if there is no such court, with that one of the courts which is competent under paragraph (c) of this article, determined, at the request of a Contracting Party concerned, by the Tribunal referred to in Article 17 as being the most closely related to the case in question;

"(ii) in any other case, with the courts competent in accordance with the legislation of the Contracting Party determined, at the request of a Contracting Party concerned, by the said Tribunal as being the most closely related to the case in question."

584. The nature, the form and the extent of compensation as well as its equitable disbribution under the Vienna Convention on Civil Liability for Nuclear Damage are governed by the competent courts of the contracting parties. Article VIII of the Convention provides:

> "Subject to the provisions of this Convention, the nature, form and extent of the compensation, as well as the equitable distribution thereof, shall be governed by the law of the competent court."

585. The domestic courts of the contracting party in whose territory the nuclear incident occurs have jurisdiction under paragraph 1 of article XI. If the nuclear incident occurs outside the territory of any contracting party, or if the place of the incident cannot be determined, the courts of the installation State of the operator liable have jurisdiction. Article XI of the Convention provides:

"ARTICLE XI

"1. Except as otherwise provided in this Article, jurisdiction over actions under Article II shall lie only with the courts of the Contracting Party within whose territory the nuclear incident occurred.

"2. Where the nuclear incident occurred outside the territory of any Contracting Party, or where the place of the nuclear incident cannot be determined with certainty, jurisdiction over such actions shall lie with the courts of the Installation State of the operator liable.

"3. Where under paragraph 1 or 2 of this Article jurisdiction would lie with the courts of more than one Contracting Party, jurisdiction shall lie -

"(a) if the nuclear incident occurred partly otuside the territory of any Contracting Party, and partly within the territory of a single Contracting Party, with the courts of the latter; and

"(b) in any other case, with the courts of that Contracting Party which is determined by agreement between the Contracting Parties whose courts would be competent under paragraph 1 or 2 of this Article."

586. Article X of the Convention on the Liability of Operators of Nuclear Ships provides that action for compensation shall be brought either before the courts of the licensing State or before the courts of the contracting State or States in whose territory nuclear damage has been sustained:

"Article X

"1. Any action for compensation shall be brought, at the option of the claimant, either before the courts of the licensing State or before the courts of the Contracting State or States in whose territory nuclear damage has been sustained.

"2. If the licensing State has been or might be called upon to ensure the payment of claims for compensation in accordance with paragraph 2 of

Article III of this Convention, it may intervene as party in any proceedings brought against the operator.

"3. Any immunity from legal processes pursuant to rules of national or international law shall be waived with respect to duties or obligations arising under, or for the purpose of, this Convention. Nothing in this Convention shall make warships or other State-owned or State-operated ships on non-commercial service liable to arrest, attachment or seizure or confer jurisdiction in respect of warships on the courts of any foreign State."

587. Domestic courts of the contracting parties are competent, under the Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, to decide on actions against the fund. Indeed, paragraph 2 of article 7 obliges the contracting States to endow their courts with necessary jurisdiction to entertain such actions. Article 7 provides:

"Article 7

"1. Subject to the subsequent provisions of this Article, any action against the Fund for compensation under Article 4 or indemnification under Article 5 of this Convention shall be brought only before a court competent under Article IX of the Liability Convention in respect of actions against the owner who is or who would, but for the provisions of Article III, paragraph 2, of that Convention, have been liable for pollution damage caused by the relevant incident.

"2. Each Contracting State shall ensure that its courts possess the necessary jurisdiction to entertain such actions against the Fund as are referred to in paragraph 1.

"3. Where an action for compensation for pollution damage has been brought before a court competent under Article IX of the Liability Convention against the owner of a ship or his guarantor, such court shall have exclusive jurisdictional competence over any action against the Fund for compensation or indemnification under the provisions of Article 4 or 5 of this Convention in respect of the same damage. However, where an action for compensation for pollution damage under the Liability Convention has been brought before a court in a State Party to the Liability Convention but not to this Convention, any action against the Fund under Article 4 or Article 5, paragraph 1, of this Convention shall at the option of the claimant be brought either before a court of the State where the Fund has its headquarters or before any court of a State Party to this Convention competent under Article IX of the Liability Convention.

"4. Each Contracting State shall ensure that the Fund shall have the right to intervene as a party to any legal proceedings instituted in accordance with Article IX of the Liability Convention before a competent court of that State against the owner of a ship or his guarantor."

588. Unless otherwise agreed upon by States, or stipulated in the licence of the railway, the domestic courts of the State in whose territory the accident to the passenger occurs are competent to entertain actions for compensation under the Additional Convention to the International Convention concerning the Carriage of Passengers and Luggage by Rail (CIV) of 26 February 1961 relating to the liability of railways for death of and personal injury to passengers. Article 15 of the Convention provides:

"Article 15

"Jurisdiction

"Actions brought under this Convention may only be instituted in the competent court of the State on whose territory the accident to the passenger occurred, unless otherwise provided in agreements between States, or in any licence or other document authorising the operation of the railway concerned."

589. Under the International Convention on Civil Liability for Oil Pollution Damage, courts of the contracting State or States in whose territory, including the territorial sea, the pollution damage has occurred or preventive measures have been taken to prevent or minimize damage are to entertain claims for compensation. Thus each contracting State has to ensure that its courts possess the necessary jurisdiction. Once the fund has been established in accordance with the requirements of article V of the Convention, the courts of the State where the fund is established have exclusive jurisdiction to decide on all matters relating to its apportionment and distribution. Article IX of the Convention provides:

"Article IX

"1. Where an incident has caused pollution damage in the territory including the territorial sea of one or more Contracting States, or preventive measures have been taken to prevent or minimize pollution damage in such territory including the territorial sea, actions for compensation may only be brought in the Courts of any such Contracting State or States. Reasonable notice of any such action shall be given to the defendant.

"2. Each Contracting State shall ensure that its Courts possess the necessary jurisdiction to entertain such actions for compensation.

"3. After the fund has been constituted in accordance with Article V of the Courts of the State in which the fund is constituted shall be exclusively competent to determine all matters relating to the apportionment and distribution of the fund."

590. The jurisdiction of the domestic courts is also applicable to ships owned by a contracting State and used for commercial purposes. Article XI provides:

"Article XI

"...

"2. With respect to ships owned by a Contracting State and used for commercial purposes, each State shall be subject to suit in the jurisdictions set forth in Article IX and shall waive all defences based on its status as a sovereign State."

591. Under the Convention on the Protection of the Environment between Denmark, Finland, Norway and Sweden, the nuisance which an activity entails or may entail in the territory of another contracting State is equated with a nuisance in the State where the activity is carried out. Thus any person who is affected or may be affected by such a nuisance can bring a claim before the Court of Administrative Authority of that State for compensation. The rules bearing on compensation shall not be less favourable to the injured party than the rules of compensation in the State where the activity is carried out. Indeed the Convention provides for equal access to competent authorites and equal treatment for both foreign injured parties and local injured parties. Relevant articles of the Convention provide:

"Article 2

"In considering the permissibility of environmentally harmful activities, the nuisance which such activities entail or may entail in another Contracting State shall be equated with a nuisance in the State where the activities are carried out.

"Article 3

"Any person who is affected or may be affected by a nuisance caused by environmentally harmful activities in another Contracting State shall have the right to bring before the appropriate Court or Administrative Authority of that State the question of the permissibility of such activities, including the question of measures to prevent damage, and to appeal against the decision of the Court or the Administrative Authority to the same extent and on the same terms as a legal entity of the State in which the activities are being carried out.

"The provisions of the first paragraph of this Article shall be equally applicable in the case of proceedings concerning compensation for damage caused by environmentally harmful activities. The question of compensation shall not be judged by rules which are less favourable to the injured party than the rules of compensation of the State in which the activities are being carried out.

"Protocol

"...

"The right established in Article 3 for anyone who suffers injury as result of environmentally harmful activities in a neighbouring State to institute proceedings for compensation before a court or administrative authority of that State shall, in principle, be regarded as including the right to demand the purchase of his real property."

592. The competent authorities to decide on liability and compensation covered by the Convention on Civil Liability for Oil Pollution Damage Resulting from Exploration for and Exploitation of Seabed Mineral Resources are the national courts of either the controlling State or the State in whose territory the damage has occurred (art. 11 (1)). Each contracting party is under obligation to ensure that its courts pass the necessary jurisdiction to entertain such actions for compensation (art. 11 (2)). It appears that the domestic courts under this Convention will be applying the Convention and their domestic law: the Convention to determine the question of liability and compensation and the domestic law for evidentiary and procedural matters. However, under paragraph (3) of article 11, the courts of the State party in which the fund is constituted are exclusively competent to determine all matters relating to the apportionment and distribution of the fund. Also, where a well has been abandoned in circumstances other than that provided by the Convention, the liability of the operator is governed by the relevant domestic law. The relevant language of paragraph 4 of article 3 provides:

"... Where a well has been abandoned in other circumstances, the liability of the operator shall be governed by the applicable national law."

593. Under article 232 of the Convention on the Law of the Sea, any damage or loss arising from measures taken in accordance with section 6 of part XII relating to the protection and preservation of the marine environment, and when those measures are unlawful or exceed those reasonably required, entail State liability. Accordingly, States are required, under the Convention, to endow their courts with appropriate jurisdiction to deal with actions brought in respect of such loss or damage. Article 232 of the Convention provides:

"States shall be liable for damage or loss attributable to them arising from measures taken pursuant to section 6 [of part XII] when such measures are unlawful or exceed those reasonably required in the light of available information. States shall provide for recourse in their courts for actions in respect of such damage or loss."

Bilateral agreements

594. Local courts have been recognized in some bilateral agreements as competent authorities to decide on liability and compensation. Article 6 of the Convention between Norway and Sweden 36/ provides that the law of the country in whose territory the damage has occurred should govern the question of compensation:

36/ Convention between Norway and Sweden on Certain Questions Relating to the Law on Watercourses (11 May 1921).

"With regard to compensation for damage or nuisances resulting from an undertaking, the law of the country in which the damage or nuisance occurs shall apply. With regard to measures for preventing or reducing the damage or nuisance, the law of the country in which the measures are to be carried out shall apply."

595. The article, however, makes no reference to the competent court. It appears that the local courts where the injury occurs are competent to decide on compensation.

596. In separate agreements between the United States and Italy 37/ and the United States and the Netherlands, 38/ the local courts and authorities of Italy and the Netherlands have been recognized as competent to decide on the liability of the United States for injuries caused by the United States nuclear ship Savannah in the territory of Italy and of the Netherlands. The relevant paragraph of the Agreement between Italy and the United States provides:

"... Within $500 million limitation in such public laws [US Public Law 85-256 and 85-602] the operator of the ship shall be subject to the jurisdiction of the Italian court ..." [Emphasis added.]

597. Article 5 of the Agreement between the Netherlands and the United States provides:

"Article 5

"The United States agrees to submit to proceedings before any competent court of the Netherlands or before any other body established under Netherlands law for the purpose of considering and determining liability for damage as described in Article 1." [Emphasis added.]

598. Furthermore, article 1 of the same treaty provides that the Netherlands courts or a commission to be established under Netherlands law shall determine the United States liability for certain nuclear damage:

"Article 1

"The United States shall provide compensation for damage which arises out of or results from a nuclear incident in connection with the design, development, construction, operation, repair, maintenance or use of the

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37/ Exchange of notes constituting an agreement between the United States of America and Italy concerning liability during private operation of the N.S. Savannah (16 December 1965).

38/ Agreement between the Government of the Kingdom of the Netherlands and the Government of the United States of America on Public Liability for Damage Caused by the N.S. Savannah (6 February 1963).

N.S. Savannah provided, and to the extent, that any competent court of the Netherlands or a Commission to be established under Netherlands law, determines the United States to be liable for public liability. The principles of law which shall govern the liability of the United States for any such damage shall be those in existence at the time of the occurrence of the said nuclear incident."

599. Article 2 of the above treaty has also indicated the possibility of holding the United States liable for awards granted by courts other than those of the Netherlands for nuclear injuries caused in the territory of the Netherlands. It provides:

"Article 2

"The United States shall indemnify any person who on account of any act or omission committed on Netherlands territory is held liable for public liability under the law of a country other than the Netherlands for damage as described in Article 1."

Judicial decisions and State practice other than agreements

600. Judicial decisions and official correspondence examined in the present study do not include any reference to local courts and authorities as competent decision makers for questions of liability and compensation, except possibly for the purpose of distributing the proceeds of lump sum payments. However, in a recent report 39/ regarding the desire of the United States Government to settle claims against the United States arising out of the nuclear tests in the Marshall Islands, it was disclosed that lawsuits seeking more than $4 billion had already been filed in the United States courts and that others were in the works. Islanders from Bikini, for example, whose largest island remains radioactive two decades after the last test, are seeking $450 million. It appears that settlements on compensation have in most cases been reached by negotiation between the authorities of the Governments concerned.

39/ International Herald Tribune, 15 June 1982, p. 5, col. 2.

2. International courts, arbitral tribunals and joint commissions

Multilateral agreements

601. In relation to activities not exclusively of a commercial nature, in which the acting entities are primarily States, the competent decision makers for questions of liability and compensation are generally arbitral tribunals. The Convention on International Liability for Damage Caused by Space Objects provides for an arbitration to decide on compensation if the parties failed to agree on it by diplomatic negotiations. Accordingly, a claims commission composed of three members: one appointed by the claimant State, one appointed by the launching State and the Chairman, will be established upon the request of either party. Relevant articles of the Convention provide:

"Article VIII

"1. A State which suffers damage, or whose natural or juridical persons suffer damage, may present to a launching State a claim for compensation for such damage.

"2. If the State of nationality has not presented a claim, another State may, in respect of damage sustained in its territory by any natural or juridical person, present a claim to a launching State.

"3. If neither the State of nationality nor the State in whose territory the damage was sustained has presented a claim or notified its intention of presenting a claim, another State may, in respect of damage sustained by its permanent residents, present a claim to a launching State.

"Article IX

"A claim for compensation for damage shall be presented to a launching State through diplomatic channels. If a State does not maintain diplomatic relations with the launching State concerned, it may request another State to present its claim to that launching State or otherwise represent its interests under this Convention. It may also present its claim through the Secretary-General of the United Nations, provided the claimant State and the launching State are both Members of the United Nations."

"Article XI

"1. Presentation of a claim to a launching State for compensation for damage under this Convention shall not require the prior exhaustion of any local remedies which may be available to a claimant State or to natural or juridical persons its represents.

"2. Nothing in this Convention shall prevent a State, or natural or juridical persons it might represent, from pursuing a claim in the courts or administrative tribunals or agencies of a launching State. A State shall not, however, be entitled to present a claim under this Convention in respect of

the same damage for which a claim is being pursued in the courts or administrative tribunals or agencies of a launching State or under another international agreement which is binding on the States concerned."

"Article XIV

"If no settlement of a claim is arrived at through diplomatic negotiations as provided for in article IX, within one year from the date on which the claimant State notifies the launching State that it has submitted the documentation of its claim, the parties concerned shall establish a Claims Commission at the request of either party.

"Article XV

"1. The Claims Commission shall be composed of three members: one appointed by the claimant State, one appointed by the launching State and the third member, the Chairman, to be chosen by both parties jointly. Each party shall make its appointment within two months of the request for the establishment of the Claims Commission.

"2. If no agreement is reached on the choice of the Chairman within four months of the request for the establishment of the Commission, either party may request the Secretary-General of the United Nations to appoint the Chairman within a further period of two months.

"Article XVI

"1. If one of the parties does not make its appointment within the stipulated period, the Chairman shall, at the request of the other party, constitute a single-member Claims Commission.

"2. Any vacancy which may arise in the Commission for whatever reason shall be filled by the same procedure adopted for the original appointment.

"3. The Commission shall determine its own procedure.

"4. The Commission shall determine the place or places where it shall sit and all other administrative matters.

"5. Except in the case of decisions and awards by a single-member Commision, all decisions and awards of the Commisson shall be by majority vote."

"Article XVIII

"The Claims Commission shall decide the merits of the claim for compensation and determine the amount of compensation payable, if any."

602. Part XV of the Convention on the Law of Sea encourages and requests parties to it to settle their disputes through peaceful means. It provides an elaborate

system in which competent decision makers, depending upon the nature of the dispute, are designated as either the International Tribunal for the Law of the Sea, the International Court of Justice, or arbitral tribunals. Article 280 of the Convention gives complete freedom to the parties to a dispute to decide on their own mode of settlement for disputes regarding the interpretation and application of the Convention. Part XV of the Convention provides a wide range of possible forms of settlement of disputes. Articles 279 to 285 offer modes for reaching dispute settlement compatible with Article 33 of the Charter. First, States are obligated to settle their disputes by peaceful means (art. 279). They can agree on their own mode of dispute settlement (art. 280). Settlement by regional or other means in force between the parties is available at the option of any party to the dispute (art. 282). States parties are obligated to promptly exchange views for the purpose of agreeing on a suitable mode of peaceful settlement (art. 283). Conciliation is also provided in article 284, with its procedure (annex V, sect. 1). The parties may agree on a different procedure for conciliation. Compulsory procedures leading to binding decisions are stipulated in the Convention if the parties could not agree on their own procedures (arts. 286-299). The compulsory procedures provide that the International Court of Justice, the International Tribunal for the Law of the Sea and ad hoc tribunals are competent forums. Under article 295 of the Convention, the parties, before submitting their dispute to this compulsory procedure, have to exhaust local remedies where this is required by international law. This article may be interpreted as referring to the exhaustion of remedies available in domestic courts and administrative courts, as well as negotiation with competent authorities of the acting State. Relevant articles of the Convention on the Law of the Sea on dispute settlement provide:

"PART XV

"SETTLEMENT OF DISPUTES

"SECTION 1. GENERAL PROVISIONS

"Article 279

"Obligation to settle disputes by peaceful means

"States Parties shall settle any dispute between them concerning the interpretation or application of this Convention by peaceful means in accordance with Article 2, paragraph 3, of the Charter of the United Nations and, to this end, shall seek a solution by the means indicated in Article 33, paragraph 1, of the Charter.

"Article 280

"Settlement of disputes by any peaceful means chosen by the parties

"Nothing in this Part impairs the right of any States Parties to agree at any time to settle a dispute between them concerning the interpretation or application of this Convention by any peaceful means of their own choice.

"Article 281

"Procedure where no settlement has been reached by the parties

"1. If the States Parties which are parties to a dispute concerning the interpretation or application of this Convention have agreed to seek settlement of the dispute by a peaceful means of their own choice, the procedures provided for in this Part apply only where no settlement has been reached by recourse to such means and the agreement between the parties does not exclude any further procedure.

"2. If the parties have also agreed on a time-limit, paragraph 1 applies only upon the expiration of that time-limit.

"Article 282

"Obligations under general, regional or bilateral agreements

"If the States Parties which are parties to a dispute concerning the interpretation or application of this Convention have agreed, through a general, regional or bilateral agreement or otherwise, that such dispute shall, at the request of any party to the dispute, be submitted to a procedure that entails a binding decision, that procedure shall apply in lieu of the procedures provided for in this Part, unless the parties to the dispute otherwise agree.

"Article 283

"Obligation to exchange views

"1. When a dispute arises between States Parties concerning the interpretation or application of this Convention, the parties to the dispute shall proceed expeditiously to an exchange of views regarding its settlement by negotiation or other peaceful means.

"2. The parties shall also proceed expeditiously to an exchange of views where a procedure for the settlement of such a dispute has been terminated without a settlement or where a settlement has been reached and the circumstances require consultation regarding the manner of implementing the settlement.

"Article 284

"Conciliation

"1. A State Party which is a party to a dispute concerning the interpretation or application of this Convention may invite the other party or parties to submit the dispute to conciliation in accordance with the procedure under Annex V, section 1, or another conciliation procedure.

"2. If the invitation is accepted and if the parties agree upon the conciliation procedure to be applied, any party may submit the dispute to that procedure.

"3. If the invitation is not accepted or the parties do not agree upon the procedure, the conciliation proceedings shall be deemed to be terminated.

"4. Unless the parties otherwise agree, when a dispute has been submitted to conciliation, the proceedings may be terminated only in accordance with the agreed conciliation procedure.

"Article 285

"Application of this section to disputes submitted pursuant to Part XI

"This section applies to any dispute which pursuant to Part XI, section 5, is to be settled in accordance with procedures provided for in this Part. If an entity other than a State Party is a party to such a dispute, this section applies mutatis mutandis.

"SECTION 2. COMPULSORY PROCEDURES ENTAILING BINDING DECISIONS

"Article 286

"Application of procedures under this section

"Subject to section 3, any dispute concerning the interpretation or application of this Convention shall, where no settlement has been reached by recourse to section 1, be submitted at the request of any party to the dispute to the court or tribunal having jurisdiction under this section.

"Article 287

"Choice of procedure

"1. When signing, ratifying or acceding to this Convention or at any time thereafter, a State shall be free to choose, by means of a written declaration, one or more of the following means for the settlement of disputes concerning the interpretation or application of this Convention:

"(a) the International Tribunal for the Law of the Sea established in accordance with Annex VI;

"(b) The International Court of Justice;

"(c) an arbitral tribunal constituted in accordance with Annex VII;

"(d) a special arbitral tribunal constituted in accordance with Annex VIII for one or more of the categories of disputes specified therein.

"2. A declaration made under paragraph 1 shall not affect or be affected by the obligation of a State Party to accept the jurisdiction of the Sea-Bed Disputes Chamber of the International Tribunal for the Law of the Sea to the extent and in the manner provided for in Part XI, section 5.

"3. A State Party, which is a party to a dispute not covered by a declaration in force, shall be deemed to have accepted arbitration in accordance with Annex VII.

"4. If the parties to a dispute have accepted the same procedure for the settlement of the dispute, it may be submitted only to that procedure, unless the parties otherwise agree.

"5. If the parties to a dispute have not accepted the same procedure for the settlement of the dispute, it may be submitted only to arbitration in accordance with Annex VII, unless the parties otherwise agree.

"6. A declaration made under paragraph 1 shall remain in force until three months after notice of revocation has been deposited with the Secretary-General of the United Nations.

"7. A new declaration, a notice of revocation or the expiry of a declaration does not in any way affect proceedings pending before a court or tribunal having jurisdiction under this article, unless the parties otherwise agree.

"8. Declarations and notices referred to in this article shall be deposited with the Secretary-General of the United Nations, who shall transmit copies thereof to the States Parties.

"Article 288

"Jurisdiction

"1. A court or tribunal referred to in article 287 shall have jurisdiction over any dispute concerning the interpretation or application of this Convention which is submitted to it in accordance with this Part.

"2. A court or tribunal referred to in article 287 shall also have jurisdiction over any dispute concerning the interpretation or application of an international agreement related to the purposes of this Convention, which is submitted to it in accordance with the agreement.

"3. The Sea-Bed Disputes Chamber of the International Tribunal for the Law of the Sea established in accordance with Annex VI, and any other chamber or arbitral tribunal referred to in Part XI, section 5, shall have jurisdiction in any matter which is submitted to it in accordance therewith.

"4. In the event of a dispute as to whether a court or tribunal has jurisdiction, the matter shall be settled by decision of that court or tribunal.

"Article 289

"Experts

"In any dispute involving scientific or technical matters, a court or tribunal exercising jurisdiction under this section may, at the request of a party or proprio motu, select in consultation with the parties no fewer than two scientific or technical experts chosen preferably from the relevant list prepared in accordance with Annex VIII, article 2, to sit with the court or tribunal but without the right to vote.

"Article 290

"Provisional measures

"1. If a dispute has been duly submitted to a court or tribunal which considers that prima facie it has jurisdiction under this Part or Part XI, section 5, the court or tribunal may prescribe any provisional measures which it considers appropriate under the circumstances to preserve the respective rights of the parties to the dispute or to prevent serious harm to the marine environment, pending the final decision.

"2. Provisional measures may be modified or revoked as soon as the circumstances justifying them have changed or ceased to exist.

"3. Provisional measures may be prescribed, modified or revoked under this article only at the request of a party to the dispute and after the parties have been given an opportunity to be heard.

"4. The court or tribunal shall forthwith give notice to the parties to the dispute, and to such other States Parties as it considers appropriate, of the prescription, modification or revocation of provisional measures.

"5. Pending the constitution of an arbitral tribunal to which a dispute is being submitted under this section, any court or tribunal agreed upon by the parties or, failing such agreement within two weeks from the date of the request for provisional measures, the International Tribunal for the Law of the Sea or, with respect to activities in the Area, the Sea-Bed Disputes Chamber, may prescribe, modify or revoke provisional measures in accordance with this article if it considers that prima facie the tribunal which is to be constituted would have jurisdiction and that the urgency of the situation so requires. Once constituted, the tribunal to which the dispute has been submitted may modify, revoke or affirm those provisional measures, acting in conformity with paragraphs 1 to 4.

"6. The parties to the dispute shall comply promptly with any provisional measures prescribed under this article.

"Article 291

"Access

"1. All the dispute settlement procedures specified in this Part shall be open to States Parties.

"2. The dispute settlement procedures specified in this Part shall be open to entities other than States Parties only as specifically provided for in this Convention.

"Article 292

"Prompt release of vessels and crews

"1. Where the authorities of a State Party have detained a vessel flying the flag of another State Party and it is alleged that the detaining State has not complied with the provisions of this Convention for the prompt release of the vessel or its crew upon the posting of a reasonable bond or other financial security, the question of release from detention may be submitted to any court or tribunal agreed upon by the parties or, failing such agreement within 10 days from the time of detention, to a court or tribunal accepted by the detaining State under article 287 or to the International Tribunal for the Law of the Sea, unless the parties otherwise agree.

"2. The application for release may be made only by or on behalf of the flag State of the vessel.

"3. The court or tribunal shall deal without delay with the application for release and shall deal only with the question of release, without prejudice to the merits of any case before the appropriate domestic forum against the vessel, its owner or its crew. The authorities of the detaining State remain competent to release the vessel or its crew at any time.

"4. Upon the posting of the bond or other financial security determined by the court or tribunal, the authorities of the detaining State shall comply promptly with the decision of the court or tribunal concerning the release of the vessel or its crew.

"Article 293

"Applicable law

"1. A court or tribunal having jurisdiction under this section shall apply this Convention and other rules of international law not incompatible with this Convention.

"2. Paragraph 1 does not prejudice the power of the court or tribunal having jurisdiction under this section to decide a case ex aequo et bono, if the parties so agree.

"Article 294

"Preliminary proceedings

"1. A court or tribunal provided for in article 287 to which an application is made in respect of a dispute referred to in article 297 shall determine at the request of a party, or may determine proprio motu, whether the claim constitutes an abuse of legal process or whether prima facie it is well founded. If the court or tribunal determines that the claim constitutes an abuse of legal process or is prima facie unfounded, it shall take no further action in the case.

"2. Upon receipt of the application, the court or tribunal shall immediately notify the other party or parties of the application, and shall fix a reasonable time-limit within which they may request it to make a determination in accordance with paragraph 1.

"3. Nothing in this article affects the right of any party to a dispute to make preliminary objections in accordance with the applicable rules of procedure.

"Article 295

"Exhaustion of local remedies

"Any dispute between States Parties concerning the interpretation or application of this Convention may be submitted to the procedures provided for in this section only after local remedies have been exhausted where this is required by international law.

"Article 296

"Finality and binding force of decisions

"1. Any decision rendered by a court or tribunal having jurisdiction under this section shall be final and shall be complied with by all the parties to the dispute.

"2. Any such decision shall have no binding force except between the parties and in respect of that particular dispute.

"SECTION 3. LIMITATIONS AND EXCEPTIONS TO APPLICABILITY OF SECTION 2

"Article 297

"Limitations on applicability of section 2

"1. Disputes concerning the interpretation or application of this Convention with regard to the exercise by a coastal State of its sovereign rights or jurisdiction provided for in this Convention shall be subject to the procedures provided for in section 2 in the following cases:

"(a) when it is alleged that a coastal State has acted in contravention of the provisions of this Convention in regard to the freedoms and rights of navigation, overflight or the laying of submarine cables and pipelines, or in regard to other internationally lawful uses of the sea specified in article 58;

"(b) when it is alleged that a State in exercising the aforementioned freedoms, rights or uses has acted in contravention of this Convention or of laws or regulations adopted by the coastal State in conformity with this Convention and other rules of international law not incompatible with this Convenion; or

"(c) when it is alleged that a coastal State has acted in contravention of specified international rules and standards for the protection and preservation of the marine environment which are applicable to the coastal State and which have been established by this Convention or through a competent international organization or diplomatic conference in accordance with this Convention.

"2. (a) Disputes concerning the interpretation or application of the provisions of this Convention with regard to marine scientific research shall be settled in accordance with section 2, except that the coastal State shall not be obliged to accept the submission to such settlement of any dispute arising out of:

"(i) the exercise by the coastal State of a right or discretion in accordance with article 246; or

"(ii) a decision by the coastal State to order suspension or cessation of a research project in accordance with article 253.

"(b) A dispute arising from an allegation by the researching State that with respect to a specific project the coastal State is not exercising its rights under articles 246 and 253 in a manner compatible with this Convention shall be submitted, at the request of either party, to conciliation under Annex V, section 2, provided that the conciliation commission shall not call in question the exercise by the coastal State of its discretion to designate specific areas as referred to in article 246, paragraph 6, or of its discretion to withhold consent in accordance with article 246, paragraph 5.

"3. (a) Disputes concerning the interpretation or application of the provisions of this Convention with regard to fisheries shall be settled in accordance with section 2, except that the coastal State shall not be obliged to accept the submission to such settlement of any dispute relating to its sovereign rights with respect to the living resources in the exclusive economic zone or their exercise, including its discretionary powers for determining the allowable catch, its harvesting capacity, the allocation of surpluses to other States and the terms and conditions established in its conservation and management laws and regulations.

"(b) Where no settlement has been reached by recourse to section 1 of this Part, a dispute shall be submitted to conciliation under Annex V, section 2, at the request of any party to the dispute, when it is alleged that:

"(i) a coastal State has manifestly failed to comply with its obligations to ensure through proper conservation and management measures that the maintenance of the living resources in the exclusive economic zone is not seriously endangered;

"(ii) a coastal State has arbitrarily refused to determine, at the request of another State, the allowable catch and its capacity to harvest living resources with respect to stocks which that other State is interested in fishing; or

"(iii) a coastal State has arbitrarily refused to allocate to any State, under articles 62, 69 and 70 and under the terms and conditions established by the coastal State consistent with this Convention, the whole or part of the surplus it has declared to exist.

"(c) In no case shall the conciliation commission substitute its discretion for that of the coastal State.

"(d) The report of the conciliation commission shall be communicated to the appropriate international organizations.

"(e) In negotiating agreements pursuant to articles 69 and 70, States Parties, unless they otherwise agree, shall include a clause on measures which they shall take in order to minimize the possibility of a disagreement concerning the interpretation or application of the agreement, and on how they should proceed if a disagreement nevertheless arises.

"Article 298

"Optional exceptions to applicability of section 2

"1. When signing, ratifying or acceding to this Convention or at any time thereafter, a State may, without prejudice to the obligations arising under section 1, declare in writing that it does not accept any one or more of the procedures provided for in section 2 with respect to one or more of the following categories of disputes:

"(a) (i) disputes concerning the interpretation or application of articles 15, 74 and 83 relating to sea boundary delimitations, or those involving historic bays or titles, provided that a State having made such a declaration shall, when such a dispute arises subsequent to the entry into force of this Convention and where no agreement within a reasonable period of time is reached in negotiations between the parties, at the request of any party to the dispute, accept submission of the matter to conciliation under Annex V, section 2; and provided further that any dispute that necessarily involves the concurrent consideration of any unsettled dispute concerning sovereignty or other rights over continental or insular land territory shall be excluded from such submission;

"(ii) after the conciliation commission has presented its report, which shall state the reasons on which it is based, the parties shall negotiate an agreement on the basis of that report; if these negotiations do not result in an agreement, the parties shall, by mutual consent, submit the question to one of the procedures provided for in section 2, unless the parties otherwise agree;

"(iii) this subparagraph does not apply to any sea boundary dispute finally settled by an arrangement between the parties, or to any such dispute which is to be settled in accordance with a bilateral or multilateral agreement binding upon those parties;

"(b) disputes concerning military activities, including military activities by government vessels and aircraft engaged in non-commercial service, and disputes concerning law enforcement activities in regard to the exercise of sovereign rights or jurisdiction excluded from the jurisdiction of a court or tribunal under article 297, paragraph 2 or 3;

"(c) disputes in respect of which the Security Council of the United Nations is exercising the functions assigned to it by the Charter of the United Nations, unless the Security Council decides to remove the matter from its agenda or calls upon the parties to settle it by the means provided for in this Convention.

"2. A State Party which has made a declaration under paragraph 1 may at any time withdraw it, or agree to submit a dispute excluded by such declaration to any procedure specified in this Convention.

"3. A State Party which has made a declaration under paragraph 1 shall not be entitled to submit any dispute falling within the excepted category of disputes to any procedures in this Convention as against another State Party, without the consent of that party.

"4. If one of the States Parties has made a declaration under paragraph 1 (a), any other State Party may submit any dispute falling within an excepted category against the declarant party to the procedure specified in such declaration.

"5. A new declaration, or the withdrawal of a declaration, does not in any way affect proceedings pending before a court or tribunal in accordance with this article, unless the parties otherwise agree.

"6. Declarations and notices of withdrawal of declarations under this article shall be deposited with the Secretary-General of the United Nations, who shall transmit copies thereof to the States Parties.

"Article 299

"Right of the parties to agree upon a procedure

"1. A dispute excluded under article 297 or excepted by a declaration made under article 298 from the dispute settlement procedures provided for in section 2 may be submitted to such procedures only by agreement of the parties to the dispute.

"2. Nothing in this section impairs the right of the parties to the dispute to agree to some other procedure for the settlement of such dispute or to reach an amicable settlement."

Bilateral agreements

603. Under a number of bilateral agreements, separate bodies are set up as authorities competent to decide the question of compensation. In a treaty between Finland and Sweden regarding their frontier rivers, 40/ the Frontier River Commission is competent to take decisions on questions of compensation arising from activities within the scope of the agreement. Article 2 of chapter 7 provides:

> "The Frontier River Commission may also take decisions otherwise than in connexion with applications for permission on questions of compensation arising from measures falling within the scope of this Agreement.
>
> "Compensation for damage and inconvenience resulting from the measures referred to in chapter 3, article 21 shall, in the absence of agreement, be fixed by the Frontier River Commission."

Article 3 of the same chapter states that the applicable law, however, is that of the country in whose territory the injury has taken place. 41/

604. The competence of a claims commission for deciding the question of compensation has also been stipulated in an agreement between Canada and the United States. This Agreement, relating to certain rocket launches, 42/ states that if claims arising from these launches are not settled through negotiation, the two Governments may establish a Claims Commission, as provided for in Article XV of the Convention on International Liability for Damage Caused by Space Objects. The relevant paragraph of the Agreement provides:

> "...
>
> "In the event that a claim arising out of these launches is not settled expeditiously in a mutually acceptable manner, the Government of the United

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40/ Agreement between Finland and Sweden concerning Frontier Rivers (15 December 1971).

41/ Article 3 of chapter 7 reads:

> "Save as otherwise provided in this Agreement, the law of the State in which the property used is situated or in which loss, damage or inconvenience otherwise occurs shall apply in respect of the grounds for compensation, the right of the owner of property used or damaged to demand payment and the manner and time of payment of compensation."

42/ Agreement Effected by Exchange of Notes between the United States of America and Canada concerning Liability for Loss or Damage from Certain Rocket Launches (31 December 1974).

States and the Government of Canada shall give consideration to the establishment of a Claims Commission such as that provided for in Article XV of the Convention on International Liability for Damage Caused by Space Objects with a view to arriving at a prompt and equitable settlement.

"..." [Emphasis added.]

Judicial decisions and State practice other than agreements

605. Most of the judicial decisions surveyed in this study were adjudicated by the Permanent Court of International Justice, by the International Court of Justice or by arbitration tribunals on the basis of agreements by the parties or a prior treaty obligation. At least one arbitral tribunal, the Trail Smelter Tribunal, in its decision, provided for an arbitration mechanism in the event that the States parties cannot agree on modification or amendment to the régime proposed by one side:

"VI. Amendment or Suspension of the Régime.

"If at any time after December 31, 1942, either Government shall request an amendment or suspension of the régime herein prescribed and the other Government shall decline to agree to such request, there shall be appointed by each Government, within one month after the making or receipt respectively of such request, a scientist of repute; and the two scientists so appointed shall constitute a Commission for the purpose of considering and acting upon such request. If the Commission within three months after appointment fail to agreement upon a decision, they shall appoint jointly a third scientist who shall be Chairman of the Commission; and thereupon the opinion of the majority, or in the absence of any majority opinion, the opinion of the Chairman shall be decisive: the opinion shall be rendered within one month after the choice of the Chairman. If the two scientists shall fail to agree upon a third scientist within the prescribed time, upon the request of either, he shall be appointed within one month from such failure by the President of the American Chemical Society, a scientific body having a membership both in the United States, Canada, Great Britain and other countries.

"Any of the periods of time herein prescribed may be extended by agreement between the two Governments.

"The Commission of two, or three scientists as the case may be, may take such action in compliance with or in denial of the request above referred to, either in whole or in part, as it deems appropriate for the avoidance or prevention of damage occurring in the State of Washington. The decision of the Commission shall be final and the Governments shall take such action as may be necessary to ensure due conformity with the decision, in accordance with the provisions of Article XII of the Convention.

"The compensation of the scientists appointed and their reasonable expenditures shall be paid by the Government which shall have requested a decision; if both Governments shall have made a request for decision, such

expenses shall be shared equally by both Governments: provided, however, that if the Commission in response to the request of the United States shall find that notwithstanding compliance with the régime in force damage has occurred through fumes in the State of Washington, then the above expenses shall be paid by the Dominion of Canada." 43/

3. Applicable law

Multilateral agreements

606. It appears that international law is applicable to disputes arising from activities which are solely performed by States. Domestic laws, on the other hand, are applicable to disputes arising from activities mostly of a commercial nature. The latter activities are substantially dominated by private entities. The Convention on International Liability for Damage Caused by Space Objects regulates space activities at present controlled by States and provides that international law and the principles of justice and equity are the applicable law in accordance with which compensation and such reparation in respect of the damage as will restore the person, natural or judicial, State or international organization, should be accorded. Article XII provides:

"Article XII

"The compensation which the launching State shall be liable to pay for damage under this Convention shall be determined in accordance with international law and the principles of justice and equity, in order to provide such reparation in respect of the damage as will restore the person, natural or juridical, State or international organization on whose behalf the claim is presented to the condition which would have existed if the damage had not occurred."

607. Similarly, article 293 of the Convention on the Law of the Sea provides that when a court or a tribunal is resolving a dispute regarding the application or interpretation of the Convention, it shall apply the Convention and other rules of international law not incompatible with the Convention. However, when parties to a dispute agree, a court or a tribunal can decide a case ex aequo et bono. Article 293 provides:

"Applicable law

"1. A court or tribunal having jurisdiction under this section [sect. 2 of part XV] shall apply this Convention and other rules of international law not incompatible with this Convention.

"2. Paragraph 1 does not prejudice the power of the court or tribunal having jurisdiction under this section to decide a case ex aequo et bono, if the parties so agree."

43/ United Nations, Reports of International Arbitral Awards, vol. III, p. 1978.

608. By court, the Convention, refers to the International Court of Justice or the International Tribunal for the Law of the Sea.

609. On the other hand, the Additional Convention to the International Convention concerning the Carriage of Passengers and Luggage by Rail (CIV) of 26 February 1961 relating to the liability of railways for death of and personal injury to passengers, regulating basically a commercial activity, provides for the application of national law. Article 6 of the Convention provides:

"Article 6

"...

"2. The amount of damages to be awarded under paragraph 1 shall be determined in accordance with national law. However, in the event of the national law providing for a maximum limit of less than 200,000 francs, the limit per passenger shall, for the purposes of this Convention, be fixed at 200,000 francs in the form of a lump sum or of an annuity corresponding to that amount."

610. Similarly, the Convention on the Liability of Operators of Nuclear Ships provides for the application of national law. Article VI of the Convention provides:

"Where provisions of national health insurance, social insurance, social security, workmen's compensation or occupational disease compensation systems include compensation for nuclear damage, rights of beneficiaries under such systems and rights of subrogation, or of recourse against the operator, by virtue of such systems, shall be determined by the law of the Contracting State having established such systems. However, if the law of such Contracting State allows claims of beneficiaries of such systems and such rights of subrogation and recourse to be brought against the operator in conformity with the terms of this Convention, this shall not result in the liability of the operator exceeding the amount specified in paragraph 1 of Article III."

611. Under the International Convention Relating to the Limitation of the Liability of Owners of Sea-going Ships, claims for liability and compensation are brought to the relevant national courts of the contracting parties and the national law is applicable as far as the procedure of bringing such claims is concerned, and also as to the time limits within which such actions shall be brought or prosecuted (art. 5 (5)). The national law will determine who has the burden to prove whether or not the accident causing the injury has been the result of negligence (art. 1 (6)).

Bilateral agreements

612. The provisions of bilateral agreements themselves appear to be the applicable law to a dispute. In a few agreements, however, the domestic laws of one of the parties have been recognized as the applicable law. For example, article 6 of the

Convention between Norway and Sweden 44/ provides that the law of the country in whose territory the damage has occurred governs the question of compensation:

> "With regard to compensation for damage or nuisances resulting from an undertaking, the law of the country in which the damage or nuisance occurs shall apply. With regard to measures for preventing or reducing the damage or nuisance, the law of the country in which the measures are to be carried out shall apply."

613. The United States, in separate agreements with Italy and the Netherlands regarding the use of their ports for the United States nuclear ship Savannah has recognized the jurisdiction of the courts of Italy and of the Netherlands to decide on the liability of the United States for the injuries its ship may cause in their territories. The Agreement with the Netherlands provides for the application of the existing principles of law. Article 1 of the Agreement 45/ provides:

> "The United States shall provide compensation for damage which arises out of or results from a nuclear incident in connection with the design, development, construction, operation, repair, maintenance or use of the N.S. Savannah provided, and to the extent, that any competent court of the Netherlands or a Commission to be established under Netherlands law, determines the United States to be liable for public liability. The principles of law which shall govern the liability of the United States for any such damage shall be those in existence at the time of the occurrence of the said nuclear incident." [Emphasis added.]

614. In its 1964 Agreement with Italy, 46/ the United States accepted the competence of the Italian courts and the applicability of the Italian law. Article VIII of that Agreement provides:

> "Article VIII
>
> "Liability for Damage
>
> "Within the limitations of liability set by United States Public Law 85-256 (annex 'A'), as amended by 85-602 (annex 'B'), in any legal action or proceeding brought in personam against the United States in an Italian court, the United States Government will pay compensation for any responsibility

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44/ Convention between Norway and Sweden on Certain Questions Relating to the Law on Watercourses (11 May 1921).

45/ Agreement between the Government of the Kingdom of the Netherlands and the Government of the United States of America on Public Liability for Damage Caused by the N.S. Savannah (6 February 1963).

46/ Agreement between the Government of the United States of America and the Government of Italy on the Use of Italian Ports by the N.S. Savannah (23 November 1964).

which an Italian court may find, according to Italian law, for any damage to people or goods deriving from a nuclear incident in connection with, arising out of or resulting from the operation, repair, maintenance or use of the Ship, in which the N.S. Savannah may be involved within Italian territorial waters, or outside of them on a voyage to or from Italian ports if damage is caused in Italy or on ships of Italian registry." [Emphasis added.]

615. By the 1965 Agreement with Italy 47/ in which a private entity was operating the N.S. Savannah, the United States, after referring to the inapplicability of the 1964 Agreement, agrees to a new provision on liability in which the competence of the Italian courts is recognized but the applicable law is unstated. The new Agreement provides:

"In view of the inapplicability of the Agreement of November 23, 1964 to the new situation, the Embassy proposes that the following shall constitute the agreement between the two Governments in the new situation.

"Within the limitation of liability set by United States Public Law 85-256 (Annex A), as amended by 85-602 (Annex B) in any legal action or proceeding brought in personam against the operator to the N.S. Savannah in an Italian court, the United States Government will provide compensation by way of indemnity for any legal liability which an Italian court may find for any damage to people or goods deriving from a nuclear incident in connection with, arising out of or resulting from the operation, repair, maintenance or use of the N.S. Savannah, in which the N.S. Savannah may be involved within Italian territorial waters, or outside of them on a voyage to or from Italian ports if damage is caused in Italy or on ships of Italian registry. Within the $500 million limitation in such public laws, the operator of the ship shall be subject to the jurisdiction of the Italian court and shall not invoke the provisions of Italian law or any other law relating to the limitation of shipowner's liability."

616. It is stated in the Agreement that the operator of the ship will not invoke the provisions of Italian law to limit its liability. This language, together with the reference to the jurisdiction of Italian courts, may be taken to imply that Italian law is also applicable in a way similar to the 1964 Agreement. In the above two agreements, the limitation of liability set by United States Public Law 85-256, as amended by Public Law 85-602, is also applicable. Thus article 6 of the Agreement with the Netherlands states that the definition of the terms "persons indemnified", "public liability" and "nuclear incident" have in the agreement the same meaning as found in section 11 of the United States Atomic Energy Act of 1954 as amended (United States Code, title 42, sect. 2014). Article 6 of this Agreement provides:

47/ Exchange of notes constituting an agreement between the United States of America and Italy concerning liability during private operations of the N.S. Savannah (16 December 1965).

"As used in this Agreement and its Annex, the terms 'persons indemnified', 'public liability' and 'nuclear incident' have the same meaning as in the definitions of those terms found in Section 11 of the United States Atomic Energy Act of 1954, as amended (U.S. Code, Title 42, Section 2014)."

617. Hence it appears that in addition to the treaties and the domestic laws of both "potentially injured States", Italy and the Netherlands, certain laws of the acting State, the United States, are also applicable. In the Agreement with the Netherlands, the principles of law are also relevant and applicable. Furthermore, under the Agreement with the Netherlands, the United States will be liable for injuries caused to any person in the Netherlands territorial waters under the law of a country other than the Netherlands. Hence a law of a third State may also be applicable. Article 2 of the Agreement provides:

"Article 2

"The United States shall indemnify any person who on account of any act or omission committed on Netherlands territory is held liable for public liability under the law of a country other than the Netherlands for damage as described in Article 1."

Of course, it is unclear from the Agreement which court is competent to apply the law of the third State.

618. In an agreement with Ireland for the use of its port by the United States N.S. Savannah, the United States submits to Irish courts for injuries its ship causes in Irish territory or outside Ireland during a voyage of the ship to or from Ireland and causing damage to Ireland. Under this Agreement, the limitation on liability under the United States public law, the terms of the Agreement itself, as well as the domestic law of Ireland are applicable.

Judicial decisions and State practice other than agreements

619. Under Article 38 of the Statute of the Permanent Court of International Justice as well as of the Statute of the International Court of Justice, the function of the Court is to decide disputes coming before them in accordance with international law. The sources of international law under Article 38 of the Statute of the International Court of Justice are:

"...

"a. international conventions, whether general or particular, establishing rules expressly recognized by the contesting States;

"b. international custom, as evidence of a general practice accepted as law;

"c. the general principles of law recognized by civilized nations;

"d. subject to the provisions of Article 59, judicial decisions and the teachings of the most highly qualified publicists of the various nations, as subsidiary means for the determination of rules of law;

"..."

620. Under this article, if the parties agree, the Court has the competence to decide their case ex aequo et bono. The decisions of the international courts bearing on issues of extraterritorial injuries and liability have been made within that framework of law.

621. The decisions of the arbitral tribunals have also been handed down under the treaty obligations among the parties as well as international law, and occasionally the domestic law of States. The Trail Smelter Tribunal examined the decisions of the United States Supreme Court as well as other sources of law and reached the conclusion that "under the principles of international law, as well as of the law of the United States, no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another ...". 48/

622. In their official correspondence, States have referred to international law and general principles of law, as well as the treaty obligations. Canada's claim for damages for the crash of the Soviet Cosmos 954 was based on treaty obligations as well as the "general principles of law recognized by civilized nations". 49/ Regional principles or standards of behaviour have been considered relevant in

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48/ United Nations, Reports of International Arbitral Awards, vol. III, p. 1965. Emphasis added.

49/ International Legal Materials, vol. 18, p. 907. Emphasis added.

State interactions. The principles accepted in Europe regarding the requirement of prior negotiation with neighbours by States whose activities may be injurious to them were mentioned in 1973 by the Dutch Government in relation to the intention of the Belgian Government to construct a refinery near its frontier with the Netherlands. 50/ Similarly, the United States Government in an official letter to Mexico regarding Mexico's protective measure for the prevention of flood, referred to the "principle of international law which obligates every State to respect the full sovereignty of other States". 51/

623. Decisions of domestic courts in addition to the domestic law have referred to the applicability of international law, international comity, etc. For example, the German Constitutional Court, in regard to a provisional decision concerning the flow of waters of the Danube in Württemberg and Prussia v. Baden, measured the interference with the flow of international rivers under international law. It stated that "only considerable interference with natural flow of international rivers can form the basis for claims under international law". 52/ References to international duty were made by the Italian Court of Cassation in Roja. It stated that a State "cannot disregard the international duty, ... not to impede or to destroy ... the opportunity of other States to avail themselves of the flow of water for their own national needs." 53/ And, finally, the United States Supreme Court referred to the law of nations in its decision on United States v. Arizona. It cited "the law of nations requir[ing] every national Government to use 'due diligence' to prevent a wrong being done within its own dominion to another nation ...". 54/

C. Enforcement of judgements

624. An effective and essential element in the protection of the right of injured parties is the enforceability of awards and judgements on compensation. State practice has made reference to the principle that States should not put obstacles in the way of or claim immunity from judicial proceedings dealing with disputes arising from extraterritorial injuries from activities undertaken within the jurisdiction of a State. Thus States have agreed to enforce the awards rendered by competent decision makers regarding disputes arising from such injuries.

50/ Belgium Parliamentary Records, Recueil de points de vue belges, 19 July 1973, p. 19.

51/ M. Whiteman, Digest of International Law, vol. 6, p. 265.

52/ Hackworth, Digest of International Law, vol. 1, p. 598. Emphasis added.

53/ International Law Reports (1938-1940), p. 121. Emphasis added.

54/ United States Reports, vol. 120, p. 484.

Multilateral agreements

625. This last step in the protection of the rights of injured parties has been incorporated in multilateral agreements. They provide that a final judgement on compensation shall be enforced in the territory of contracting parties and that parties shall not invoke jurisdictional immunities. For example, the Convention on Third Party Liability in the Field of Nuclear Energy provides that final judgements rendered by the competent court under the Convention is enforceable in the territory of any of the contracting parties. Article 13 of the Convention provides:

"Article 13

"...

"(e) Judgments entered by the competent court under this article after trial, or by default, shall, when they have become enforceable under the law applied by that court, become enforceable in the territory of any of the other Contracting Parties as soon as the formalities required by the Contracting Party concerned have been complied with. The merits of the case shall not be the subject of further proceedings. The foregoing provisions shall not apply to interim judgments.

"(f) If an action is brought against a Contracting Party as an operator liable under this Convention, such Contracting Party may not invoke any jurisdictional immunities before the court competent in accordance with this article." [Emphasis added.]

626. A similar language has been incorporated in the Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface. A final judgement of the competent court is enforceable in the territory of any contracting party when the judgement has complied with the procedures required by that State for enforcement. Article 20 of the Convention provides:

"Article 20

"...

"4. Where any final judgment, including a judgment by default, is pronounced by a court competent in conformity with this Convention, on which execution can be issued according to the procedural law of that court, the judgment shall be enforceable upon compliance with the formalities prescribed by the laws of the Contracting State, or of any territory, State or province thereof, where execution is applied for:

"(a) in the Contracting State where the judgment debtor has his residence or principal place of business or,

"(b) if the assets available in that State and in the State where the judgment was pronounced are insufficient to satisfy the judgment, in any other Contracting State where the judgment debtor has assets.

"5. Notwithstanding the provisions of paragraph 4 of this Article, the court to which application is made for execution may refuse to issue execution if it is proved that any of the following circumstances exist:

"(a) the judgment was given by default and the defendant did not acquire knowledge of the proceedings in sufficient time to act upon it;

"(b) the defendant was not given a fair and adequate opportunity to defend his interests;

"(c) the judgment is in respect of a cause of action which had already, as between the same parties, formed the subject of a judgment or an arbitral award which, under the law of the State where execution is sought, is recognized as final and conclusive;

"(d) the judgment has been obtained by fraud of any of the parties;

"(e) the right to enforce the judgment is not vested in the person by whom the application for execution is made.

"6. The merits of the case may not be reopened in proceedings for execution under paragraph 4 of this Article.

"7. The court to which application for execution is made may also refuse to issue execution if the judgment is contrary to the public policy of the State in which execution is requested.

"8. If, in proceedings brought according to paragraph 4 of this Article, execution of any judgment is refused on any of the grounds referred to in subparagraphs (a), (b) or (d) of paragraph 5 or paragraph 7 of this Article, the claimant shall be entitled to bring a new action before the courts of the State where execution has been refused. The judgment rendered in such new action may not result in the total compensation awarded exceeding the limits applicable under the provisions of this Convention. In such new action the previous judgment shall be a defence only to the extent to which it has been satisfied. The previous judgment shall cease to be enforceable as soon as the new action has been started.

"The right to bring a new action under this paragraph shall, notwithstanding the provisions of Article 21, be subject to a period of limitation of one year from the date on which the claimant has received notification of the refusal to execute the judgment.

"9. Notwithstanding the provisions of paragraph 4 of this Article, the court to which application for execution is made shall refuse execution of any judgment rendered by a court of a State other than that in which the damage occurred until all the judgments rendered in that State have been satisfied.

"The court applied to shall also refuse to issue execution until final judgment has been given on all actions filed in the State where the damage occurred by those persons who have complied with the time limit referred to in Article 19, if the judgment debtor proves that the total amount of compensation which might be awarded by such judgments might exceed the applicable limit of liability under the provisions of this Convention.

"Similarly such court shall not grant execution when, in the case of actions brought in the State where the damage occurred by those persons who have complied with the time limit referred to in Article 19, the aggregate of the judgments exceeds the applicable limit of liability, until such judgments have been reduced in accordance with Article 14.

"10. Where a judgment is rendered enforceable under this Article, payment of costs recoverable under the judgment shall also be enforceable. Nevertheless the court applied to for execution may, on the application of the judgment debtor, limit the amount of such costs to a sum equal to ten per centum of the amount for which the judgment is rendered enforceable. The limits of liability prescribed by this Convention shall be exclusive of costs.

"11. Interest not exceeding four per centum per annum may be allowed on the judgment debt from the date of the judgment in respect of which execution is granted.

"12. An application for execution of a judgment to which paragraph 4 of this Article applies must be made within five years from the date when such judgment became final." [Emphasis added.]

627. When the execution of a judgement is contrary to the public policy of the State where it is to be enforced, that State may refuse execution (art. 20, para. 7). Thus, when a judgement is obtained by fraud or is given by default where the defendant was not given sufficient time to act or was not given a fair and adequate opportunity to defend its interests, the application for execution may be rejected under this Convention (art. 20, para. 5, and art. 8). Final judgements rendered by competent courts under the Additional Convention to the International Convention concerning the Carriage of Passengers and Luggage by Rail (CIV) of 26 February 1961 relating to the liability of railways for death of and personal injury to passengers are enforceable in any other contracting State. Article 20 of the Convention provides:

"Article 20

Execution of judgments. Security for costs

"1. Judgments entered by the competent court under the provisions of this Convention after trial, or by default, shall, when they have become enforceable under the law applied by that court, become enforceable in any of the other Contracting States as soon as the formalities required in the State concerned have been complied with. The merits of the case shall not be the subject of further proceedings.

"The foregoing provisions shall not apply to interim judgments nor to awards of damages in addition to costs, against a plaintiff who fails in his action.

"Settlements concluded between the parties before the competent court with a view to putting an end to a dispute, and which have been entered on the record of that court, shall have the force of a judgment of that court.

"2. Security for costs shall not be required in proceedings arising out of the provisions of this Convention." [Emphasis added.]

628. The Vienna Convention on Civil Liability for Nuclear Damage has similar language. Article XII of the Convention provides:

"ARTICLE XII

"1. A final judgment entered by a court having jurisdiction under Article XI shall be recognized within the territory of any other Contracting Party, except -

"(a) where the judgment was obtained by fraud;

"(b) where the party against whom the judgment was pronounced was not given a fair opportunity to present his case; or

"(c) where the judgment is contrary to the public policy of the Contracting Party within the territory of which recognition is sought, or is not in accord with fundamental standards of justice.

"2. A final judgment which is recognized shall, upon being presented for enforcement in accordance with the formalities required by the law of the Contracting Party where enforcement is sought, be enforceable as if it were a judgment of a court of that Contracting Party.

"3. the merits of a claim on which the judgment has been given shall not be subject to further proceedings." [Emphasis added.]

629. Under the Convention on Civil Liability for Oil Pollution Damage Resulting from Exploration for and Exploitation of Seabed Mineral Resources, a judgement given by a competent domestic court of a contracting party, which is not subject to ordinary forms of review and is enforceable in the State of origin, shall be recognized in the territory of other State parties. If, however, the judgement is obtained by fraud, or if the defendant was not given reasonable notice and a fair opportunity to present his case, the judgement will not be enforced (art. 12 (1)). Paragraph 2 of article 12 provides that a judgement given under paragraph 1 of the same article should be enforceable in the territory of any State party to the Convention after the "formalities" required by that State are complied with. Those formalities, however, should neither reopen the case nor raise the question of applicable law. Article 12 provides:

"1. Any judgment given by a court with jurisdiction in accordance with Article 11, which is enforceable in the State of origin where it is no longer subject to ordinary forms of review, shall be recognized in any State Party, except:

"(a) where the judgment was obtained by fraud; or

"(b) where the defendant was not given reasonable notice and a fair opportunity to present his case.

"2. A judgment recognized under paragraph 1 of this Article shall be enforceable in each State Party as soon as the formalities required in that State have been complied with. The formalities shall not permit the merits of the case to be reopened, nor a reconsideration of the applicable law."

630. Under this Convention, if the operator is a State party it will still be subject to the national court of the controlling State or the State in whose territory the damage has occurred. In such a case, the State operator is required to waive all sovereign immunity defences. Article 13 provides:

"Where a State is the operator, such State shall be subject to suit in the jurisdictions set forth in Article 11 and shall waive all defences based on its status as a sovereign State."

631. The Convention on International Liability for Damage Caused by Space Objects provides a different language on enforceability of awards. Under Article XIX of this Convention, if the parties agree that the decision of the Claims Commission shall be final, the decision will be final and enforceable. Otherwise, the decision of the Claims Commission will be recommendatory and the parties should consider it in good faith. Hence the enforceability of awards depends entirely on the consensus of the parties. Article XIX of the Convention provides:

"Article XIX

"1. The Claims Commission shall act in accordance with the provisions of article XII.

"2. The decision of the Commission shall be final and binding if the parties have so agreed; otherwise the Commission shall render a final and recommendatory award, which the parties shall consider in good faith. The Commission shall state the reasons for its decision or award."

632. The International Convention on Civil Liability for Oil Pollution Damage provides for the enforceability of final judgements in any contracting State. Article X of the Convention provides:

"ARTICLE X

"1. Any judgment given by a Court with jurisdiction in accordance with Article IX which is enforceable in the State of origin where it is no longer subject to ordinary forms of review, shall be recognized in any Contracting State, except:

"(a) where the judgment was obtained by fraud; or

"(b) where the defendant was not given reasonable notice and a fair opportunity to present his case.

"2. A judgment recognized under paragraph 1 of this Article shall be enforceable in each Contracting State as soon as the formalities required in that State have been complied with. The formalities shall not permit the merits of the case to be re-opened." [Emphasis added.]

633. In addition, the Convention provides that States will waive all defences of sovereign immunity. Article XI of the Convention provides:

"Article XI

"...

"2. With respect to ships owned by a Contracting State and used for commercial purposes, each State shall be subject to suit in the jurisdictions set forth in Article IX and shall waive all defences based on its status as a sovereign State." [Emphasis added.]

634. Finally, the Kuwait Regional Convention on the Protection and Development of the Marine Environment and the Coastal Areas limits invoking sovereign immunity only in legal action involving ships owned or operated by a State and used only on government non-commercial activities. Article XIV of the Convention provides:

"ARTICLE XIV

Sovereign immunity

"Warships or other ships owned or operated by a State, and used only on Government non-commercial service, shall be exempted from the application of the provisions of the present convention. Each Contracting State shall, as far as possible, ensure that its warships or other ships owned or operated by that State, and used only on Government non-commercial service, shall comply with the present Convention in the prevention of pollution to the marine environment."

Bilateral agreements

635. Explicit and implicit references to the enforcement of judgements regarding liability for extraterritorial injuries have been made in bilateral agreements.

Articles 18 and 19 of an agreement between Liberia and the Federal Republic of Germany concerning the visit of the Federal Republic of Germany's nuclear ship to Liberian ports 55/ provide that final judgements of Liberian courts regarding nuclear injuries caused by the ship shall be recognized in the Federal Republic of Germany. Those articles provide:

"Article 18

"(1) Any definite judgement passed by Liberian courts on a nuclear incident caused by the Ship shall be recognized in the Federal Republic of Germany if, under para. 1 of Article X of the Convention, jurisdiction lies with the Liberian Courts.

"(2) Recognition of a judgement may be refused only if

"(a) the judgement was obtained by fraud;

"(b) a legal proceeding between the same parties and on account of the same subject matter is pending before a court in the Federal Republic of Germany and if application was first made to this court;

"(c) the judgement is contrary to a definite decision passed by a court in the Federal Republic of Germany on the subject matter between the same parties;

"(d) the operator of the Ship did not enter an appearance in the proceeding and if the document instituting the proceeding was served on him not effectively according to the laws of the Republic of Liberia, or not on him personally in the Republic of Liberia or not by granting him German legal assistance or not in due time for the operator of the Ship to defend himself, or if the operator can prove that he was unable to defend himself because, without any fault on his part, he did not receive the document for the institution of the legal proceeding or received it too late.

"(3) In no event will the merits of any case be subject to review.

55/ Treaty between the Republic of Liberia and the Federal Republic of Germany on the Use of Liberian Waters and Ports by N.S. Otto Hahn (27 May 1970).

"Article 19

"Any judgement passed by Liberian courts, which are recognized according to Article 18 of this Treaty and which are enforceable under Liberian law, shall be enforceable in the Federal Republic of Germany as soon as the formalities required by the law of the Federal Republic of Germany have been complied with."

636. Under article VIII of a treaty concerning the use of Italian ports by the United States N.S. Savannah, 56/ the United States agreed not to plead the defence of sovereign immunity and to submit to the jurisdiction of Italian courts in case of a nuclear accident involving the Savannah. The relevant paragraph of article VIII provides:

"Subject to the $500 million limitation in such public laws, the United States Government agrees not to interpose the defence of sovereign immunity and to submit to the jurisdiction of the Italian court and not to invoke the provisions of Italian laws or any other law relating to the limitation of ship-owners' liability."

637. The article appears to refer only to the initial jurisdiction of the Italian courts. It does not appear to constitute waiver of immunity from the execution of judgements. However, it may be implied that the United States has agreed to give effect voluntarily to any judgement rendered against it. It may also be plausibly maintained that the language is general enough to include initial jurisdiction as well as execution.

638. In a similar agreement with Ireland, 57/ the United States has agreed not to plead sovereign immunity in any legal action or proceeding brought in personam against the United States in an Irish court regarding nuclear injuries involving the Savannah. Paragraph (3) of the Agreement provides:

"(3) Subject to the provisions of this Agreement in any legal action or proceeding brought in personam against the United States, in an Irish court, on account of any nuclear incident caused by the ship in Irish waters, or occurring outside Ireland during a voyage of the ship to or from Ireland and causing damage in Ireland, the United States Government

"(a) shall not plead sovereign immunity;

"(b) shall not seek to invoke the provisions of Irish law or any other law relating to the limitation of shipowner's liability."

56/ Agreement between the Government of the United States of America and the Government of Italy on the Use of Italian Ports by the N.S. Savannah (23 November 1964).

57/ Exchange of notes constituting an agreement relating to public liability for damage caused by the N.S. Savannah (18 June 1964).

This paragraph may also be interpreted to imply United States consent to satisfy any judgement rendered by Irish courts.

Judicial decisions and State practice other than agreements

639. The issue of enforcement of awards and judgements by the arbitral tribunals and courts has not been raised in judicial decisions surveyed in the present study. Official correspondence between States has usually led to compromises between them and, in most cases, States have complied with those decisions. The content of that correspondence was examined in previous chapters.

Annex I

MULTILATERAL AGREEMENTS

1. Agreement between Germany, Federal Republic of, France, Luxembourg, Netherlands and Switzerland on the International Commission for the protection of the Rhine against pollution (29 April 1963), United Nations, Treaty Series, vol. 994, p. 3.

2. Additional Agreement to the above-mention Agreement, (3 December 1976).

3. Additional Convention to the International Convention concerning the carriage of passengers and luggage by rail (CIV) of 26 February 1961 relating to the liability of railways for death of and personal injury to passengers [(with Protocol B) 1 July 1966 - Protocol I, 31 December 1971], Cmnd. 5249.

4. Draft Convention on Liability and Compensation in Connexion with the Carriage of Noxious and Hazardous Substances by Sea (1981), IMO doc. LEG/CONF.6/3.

5. Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (24 March 1983), International Legal Materials, vol. 22, p. 221.

6. Convention for the Protection of the Mediterranean Sea against Pollution (16 February 1976), United Nations, Treaty Series, I-16908.

7. Convention on Civil Liability for Oil Pollution Damage from Off Shore Operations (17 December 1976), Cmnd. 6791.

8. Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface (7 October 1952), United Nations, Treaty Series, vol. 310, p. 181.

9. Convention on International Liability for Damage Caused by Space Objects (29 March 1972), United Nations, Treaty Series, vol. 961, p. 187.

10. Convention on Limitation of Liability for Maritime Claims (19 November 1976), IMO doc., MISC (84) 2.

11. Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (29 December 1972), International Legal Materials, vol. 11, p. 1291.

12. Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (18 December 1971), United Nations, Treaty Series, I-17146.

13. Convention on the Liability of Operators of Nuclear Ships (25 May 1962), American Journal of International Law, vol. 57, p. 268, IAEA, 1976, No. 4.

14. Convention on Long-range Transboundary Air Pollution (13 November 1979), International Legal Materials, vol. 18, p. 1442.

15. Convention on the Prevention of Marine Pollution from Land-based Sources (4 June 1974), International Legal Materials, vol. 13, p. 352.

16. Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (10 December 1976), United Nations, Treaty Series, I-17119.

17. Convention on the Protection of Lake Constance from Pollution (27 October 1960), Ruster and Simma, eds., International Protection of the Environment, vol. X, p. 4814.

18. Convention on the Protection of the Environment between Denmark, Finland, Norway and Sweden (19 February 1974), United Nations, Treaty Series, I-16770.

19. Convention on the Protection of the Marine Environment of the Baltic Sea Area (22 March 1974), Ruster and Simma, eds., International Protection of the Environment, vol. 2, p. 683.

20. Convention on Third Party Liability in the Field of Nuclear Energy (29 July 1960) and its Additional Protocol (28 January 1964) United Nations, Treaty Series, vol. 956, p. 251.

21. Convention relating to the protection of the Rhine against chemical pollutants (with annexes) (3 December 1976) United Nations, Treaty Series, I-17511.

22. Convention Relating to Civil Liability in the Field of Maritime Carriage of Nuclear Material (17 December 1971), United Nations, Treaty Series, vol. 974, p. 255.

23. Convention on the Law of the Sea (1982), Sales No. 83.V.5.

24. Exchanges of letters constituting an agreement between the Governments of the French Republic, the Federal Republic of Germany and the Swiss Federal Council concerning the establishment of an intergovernmental commission on contiguity problems in frontier regions, United Nations, Treaty Series, vol. 1036, p. 367.

25. European Agreement on the Restriction of the Use of Certain Detergents in washing and Cleaning Products (16 September 1968), European Treaty Series, No. 64.

26. International Convention concerning the use of broadcasting in the cause of peace (23 September 1936), League of Nations, Treaty Series, vol. CLXXXVI, p. 301.

27. International Convention for Conservation of Atlantic Tunas (14 May 1966), United Nations, Treaty Series, vol. 673, p. 63.

28. International Convention for the Northwest Atlantic Fisheries (8 February 1949), United Nations, Treaty Series, vol. 157, p. 157.

29. International Convention for the Prevention of Pollution from Ships (2 November 1973), International Legal Materials, vol. 12, p. 1319.

30. International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (29 November 1969), United Nations, Treaty Series, vol. 970, p. 211.

31. International Convention Relating to the Limitation of the Liability of Owners of Sea-going Ships (10 October 1957), Singh, International Conventions of Merchant Shipping (1973), vol. 8 (2nd ed.) p. 1348.

32. International Convention on Civil Liability for Oil Pollution Damage (29 November 1969), United Nations, Treaty Series, vol. 973, p. 3.

33. International Radiotelegraph Convention, with general regulations (25 November 1927), League of Nations, Treaty Series, vol. LXXXIV, p. 97.

34. International Telecommunications Convention (9 December 1932), League of Nations, Treaty Series, vol. CLI, p. 5.

35. Kuwait Regional Convention on the Protection and Development of the Marine Environment and the Coastal Areas (23 April 1978), International Legal Materials vol. 17, p. 511.

36. Protocol between France, Belgium and Luxembourg to establish a tripartite Standing Committee on Polluted Waters (8 April 1950), United Nations, Treaty Series, vol. 66, p. 285.

37. Protocol between the Governments of the Federal Republic of Germany, the French Republic and the Grand Duchy of Luxembourg concerning the establishment of an international commission to protect the Moselle against pollution, United Nations, Treaty Series, vol. 940, p. 211.

38. Protocol Relating to Intervention on the High Seas in Cases of Marine Pollution by Substances Other than Oil (1973), International Legal Materials, vol. 13, p. 605.

39. Second Revised Draft Convention for the Protection of the Ozone Layer, with Additional Commentary (1983), UNEP/WG.94/3 of 30 July 1983.

40. Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water (5 August 1963), United Nations, Treaty Series, vol. 480, p. 43.

41. Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil Thereof (11 February 1971), United Nations, Treaty Series, vol. 955, p. 115.

42. Vienna Convention on Civil Liability for Nuclear Damage (21 May 1963), United Nations, Treaty Series, vol. 1063, I-16197.

Annex II

BILATERAL AGREEMENTS

1. Additional Protocol between the Union of Soviet Socialist Republics and Finland concerning compensation for loss and damage and for the work to be carried out by Finland in connexion with the implementation of the Agreement of 29 April 1959 between the Government of the Union of Soviet Socialist Republics, the Government of Finland and the Government of Norway concerning the regulation of Lake Inari by means of the Kaitakoski hydroelectric power station and dam (29 April 1959), United Nations, Treaty Series, vol. 346, p. 209.

2. Agreement between Canada and the United States of America to Track Air Pollution across Eastern North America (Acid Rain Research) (23 August 1983), International Legal Materials (1983), vol. 22, p. 1017.

3. Agreement between Canada and the United States of America Relating to the Exchange of Information on Weather Modification Activities (26 March 1975), United Nations, Treaty Series, vol. 977, p. 385.

4. Agreement between Denmark and the Federal Republic of Germany on Regulating the Exchange of Information on the Construction of Nuclear Installations along the Border, International Legal Materials, 1978, vol. 17, p. 274.

5. Agreement between the Federal People's Republic of Yugoslavia and the Kingdom of Greece concerning hydro-economic questions (18 June 1959), United Nations, Treaty Series, vol. 363, p. 133.

6. Agreement between the Federal People's Republic of Yugoslavia and the Romanian People's Republic concerning questions of water control on water control systems and watercourses on or intersected by the State frontier, together with the Statute of the Yugoslav-Romanian Water Control Commission (7 April 1955), document ST/LEG/SER.B/12, p. 928, see also Ruster and Simma, eds., International Protection of the Environment, vol. IX, p. 4531.

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