ARTIFICIAL ISLANDS AND INSTALLATIONS IN INTERNATIONAL LAW

by

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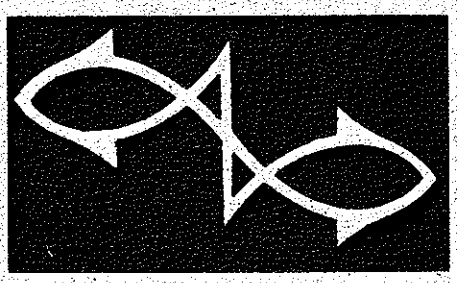

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Alfred H. A. Soons**

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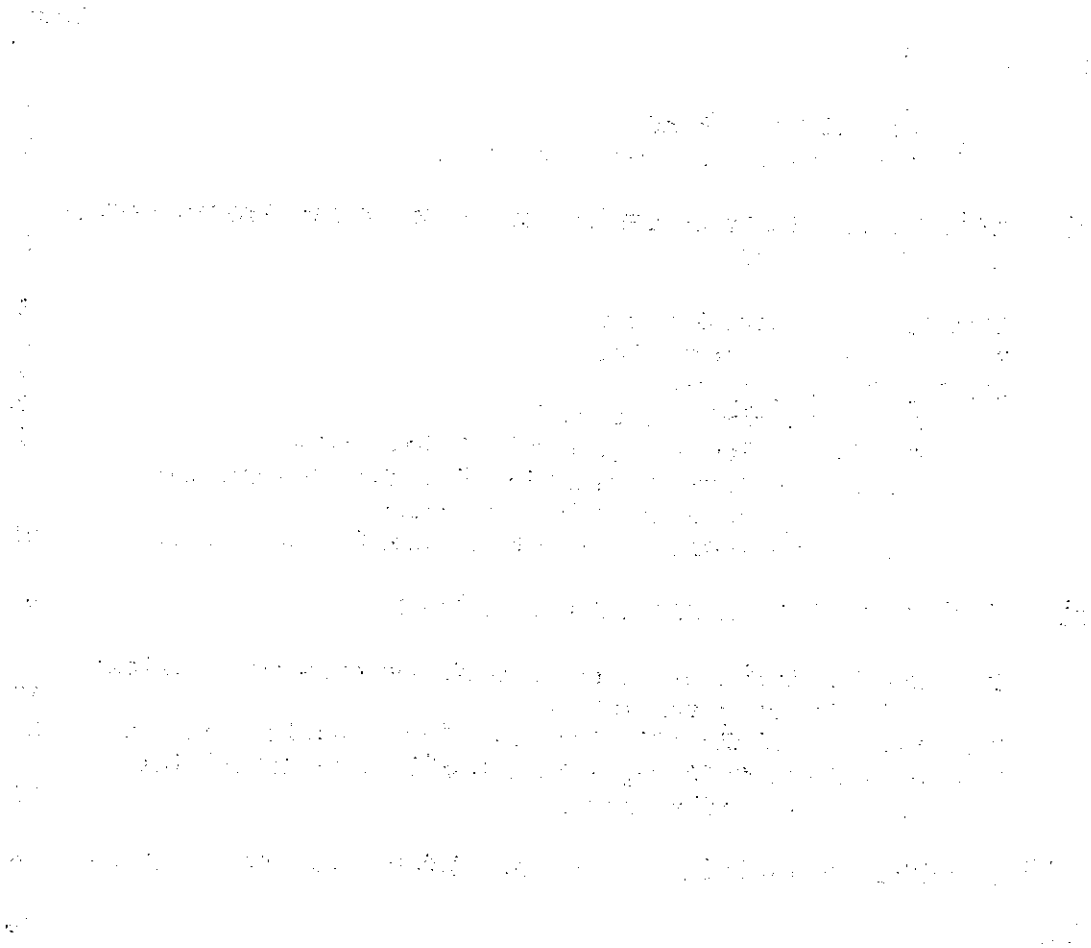

1. INTRODUCTION

1.1. Factual Background

Traditionally, the international law of the sea has dealt with activities on and in the oceans which were tied to the environment in which they took place. Navigation and fishing, probably the oldest activities, are impossible without the sea. Cables and pipelines between places separated by the ocean need the seabed to rest upon. The mineral resources of the seabed and subsoil can only be exploited by means of equipment employed on the spot. And oceanic research cannot exist without the oceans.

In recent years, however, the oceans are increasingly looked upon as a source of space. This space can be used, by means of the building of artificial islands and installations, to accommodate activities which have traditionally taken place on land, and often even have no direct relationship to the marine environment as such. The purposes for which offshore structures are now seen as a real possibility include serving as deepwater ports and airports, housing of nuclear power plants and heavy industries, and waste processing activities. Even the feasibility of constructing cities in the sea is being studied. Obviously, many of these projects are suggested by the idea that some of the environmental and space problems of densely populated industrialized coastal areas could be solved by the use of offshore facilities. This is particularly true with respect to airports because of the noise involved and the vast areas they require, and to waste-processing activities, nuclear power plants, and heavy industries because of the water and air pollution they create and the hazards involved. With respect to ports the situation is different. Here, the main reason is that many of the existing ports can only handle ships with a limited draft. The tendency during the last decade, however, has been towards ever larger ships, especially oil tankers, with very deep drafts,[1] and as a consequence many ports are not capable of handling these ships.[2] Since it is not always possible to make those ports accessible for all ships, the construction of offshore deepwater port facilities offers a solution for this problem.[3] In a sense, these facilities are intended for the same purposes for which since ancient times roadsteads have been used: the loading and unloading of ships at sea in cases where there are no onshore facilities available.

A recent example of a case where a roadstead has been replaced by an offshore facility is the artificial island, to be used as a salt terminal, built by Brazil at a distance of 11 miles from the coast of its northeasternmost state of Rio Grande do Norte. Cargo ships of up to 100,000 tons will be able to moor at the island and stock up in a few hours through an operation that now would take weeks because of antiquated loading methods and shallow waters along mile upon mile of coastal salt fields. The highly automated island will serve as a stockpiling facility for up to 90,000 tons of salt. Self-propelled 520 ton barges will load the salt at onshore salt fields with conveyor belts and dump it on the island.[4]

Technically, the offshore facilities envisaged by most of the existing plans and projects can be divided into four categories. The first consists of floating structures, kept at the same position

by anchors or other means. There already exists a large number of relatively small devices of this kind, mostly used for exploration and exploitation of the natural resources of the seabed and subsoil and related activities, but they can serve purposes requiring large dimensions as well. For example, the University of Hawaii has developed a project for a floating city.[5] The second category consists of fixed structures, resting upon the seafloor by means of piles or tubes driven into the bottom. This type presently represents the largest number of existing offshore installations; nearly all constructions used for the exploitation of the continental shelf are of this kind. Concrete structures constitute the third category. The huge oil storage tank employed in the Ekofisk field in the North Sea is a case in point.[6] The fourth category consists of those structures which have been created by the dumping of natural substances like sand, rocks and gravel. A small number of these so-called artificial islands have already been built, for various purposes. For example, in Japan coal is mined conventionally from shafts extending from mineheads on artificial islands[7] and in the Bahamas a 200-acre artificial island has been built for the underwater mining of aragonite.[8] Artificial islands for use as drilling platforms are planned for the Beaufort Sea, where ice-floes could demolish conventional platforms.[9] The Brazilian salt terminal described above is another case in point.

As indicated before, the installations of the second category still constitute the vast majority of offshore constructions. For some purposes, however, artificial islands seem to offer better perspectives, especially when constructions of large dimensions are required. Apart from the purposes to be served, the choice of the type of structure depends on such factors as the water depth at the proposed site, environmental impacts, and the expected duration of the activities. Of course, the cost-effectiveness of the operation is finally determining.

A recent study conducted by a Netherlands dredging company gives some indication of the possibilities and perspectives for the construction of artificial islands for various purposes in the open sea.[10] The study classifies the various possibilities into three groups. The first group consists of small (50 hectare) islands, to be used for highly specialized purposes such as centralized waste treatment, central storage, gas and oil processing, power generation and desalination plants; the study contained a detailed plan for the construction of such an island for waste treatment on the southern part of the Netherlands continental shelf. The second group consists of larger islands (300 hectare), which would be suitable for oil terminals, establishment of specialized industries, or for harbors for ship repairs. The small islands of the first group can be used as the first phase for the construction of these larger islands, which in turn can serve as an intermediate building phase for the large islands of the third group (1000 hectares or more). These could house extensive deep-water bound industries, including power plants and fresh water generators. Offshore airfields also are a possibility. In February 1973, a group of interested European industries founded the North Sea Islands Group, and started a feasibility study on the technical,

economic, and legal aspects of such projects, to be completed by the end of 1974.[11]

1.2. Scope and outline of this paper

The purpose of the present paper is to discuss some of the international legal aspects involved in the construction and operation of offshore facilities, and to offer some suggestions with respect to their future regulation. It is, however, necessary to define more clearly the kinds of structures covered by this study, since the legal regimes of the various kinds of structures need not necessarily be the same. The scope of this paper is limited in two respects. First, it deals only with structures which are permanently above sea level. Secondly, it does not deal with floating structures, although in some respects these could be assimilated to fixed structures. To denote the kinds of facilities covered by this study, two terms will be used. The term "artificial island" will refer to those constructions which have been created by the dumping of natural substances like sand, rocks and gravel. The term "installation" will refer to constructions resting upon the seafloor by means of piles or tubes driven into the bottom, and to concrete structures.

The following international legal aspects of the issue will be dealt with. First the permissibility of the construction of artificial islands and installations will be examined. In this respect a distinction will be drawn between the various zones in which the ocean is divided with regard to the exercise of jurisdiction, i.e., the internal waters, the territorial sea and the high seas; with respect to the high seas there will be drawn a further distinction with regard to the seabed between the continental shelf and the seabed beyond the outer limit of the continental shelf. The pressing and complex questions related to the extent of these maritime zones will not be dealt with in this study. The next section examines the question whether the construction of artificial islands and installations has any consequences for the legal regime of the waters surrounding them. Also the possible effects of their presence on the delimitation of the territorial sea will be discussed. The fourth aspect that will be dealt with is the exercise of jurisdiction to regulate activities on artificial islands and installations. Here, too, a distinction will be made between the various jurisdictional zones of the ocean. An attempt has been made to formulate those conclusions which were deemed fit for that purpose as draft articles which could be included in a comprehensive treaty on the law of the sea. These are to be found in the Annex to this paper.

2. THE PERMISSIBILITY OF THE CONSTRUCTION OF ARTIFICIAL ISLANDS AND INSTALLATIONS.

2.1 In internal waters.

Waters on the landward side of the baseline from which the breadth of the territorial sea is measured form part of the internal waters of the coastal State.[12] Since the sovereignty of a State extends to its internal waters,[13] the construction of artificial islands and installations in these areas is primarily a matter of internal concern of the coastal

State and therefore governed exclusively by its laws and regulations. There is, however, one possible exception to this rule. Article 5, paragraph 2 of the Geneva Convention on the Territorial Sea and Contiguous Zone [14] provides that where the establishment of a straight baseline in accordance with article 4 of the Convention has the effect of enclosing as internal waters areas which previously had been considered as part of the territorial sea or of the high seas, a right of innocent passage shall exist in those waters. Whether this is a general rule of customary international law, or a provision only binding upon the States parties to the Convention is not clear. [15] The implications of this situation for the construction of artificial islands and installations in such areas will be discussed in the next section, when dealing with the innocent passage through the territorial sea.

2.2. In the territorial sea.

It is a generally accepted principle of international law that the sovereignty of a State extends to its territorial sea. [16] This implies that the coastal State decides whether in this area an artificial island or installation may be constructed or not. However, this is not to suggest that a coastal State is entirely free in this respect; it must exercise its sovereignty subject to certain rules of international law. [17] The limitations which international law imposes on the coastal State can be divided into three categories.

First of all, international law recognizes a right of innocent passage by foreign ships through the territorial sea. [18] The coastal State may not hamper the innocent passage, and is required to give appropriate publicity to any dangers to navigation, of which it has knowledge, within its territorial sea. [19] The coastal State may suspend temporarily in specified areas of its territorial sea the innocent passage of foreign ships only if such suspension is essential for the protection of its security. However, there may be no suspension of the innocent passage of foreign ships through straits which are used for international navigation between one part of the high seas and another part of the high seas or the territorial sea of a foreign State. [20] From these rules follows that when artificial islands or installations are to be constructed in these waters, navigation has to be taken into account seriously. This does not necessarily imply that an artificial island or installation may never be built in an area where foreign ships sail regularly. Short detours caused by their presence will be reasonable if there is no alternative site for their location and if the benefits resulting from the construction of the island or installation in that particular area outweigh the inconvenience it causes to navigation. The innocent passage may never be hampered entirely, however. [21] This applies a fortiori to internation straits. The construction of an artificial island or installation therein is not permitted if it would have the consequence that navigation through the strait is not possible anymore. This is even the case when the international strait in question is not the only route available. According to the judgment of the International Court of Justice in the Corfu Channel Case, the decisive criterion in determining whether or not a particular area constitutes an international strait is its geographical situation as connecting two parts of the high seas and the fact of its being used for international navigation; it is not decisive that the strait in question is not a necessary route between

to parts of the high seas, but only an alternative passage. [22]

The second set of rules limiting the coastal State's sovereign powers over its territorial sea relates to the effects which the construction of an artificial island or installation could have on the territory of another State. The International Court of Justice, again in the Corfu Channel Case, stated that every State has the obligation not knowingly to allow its territory to be used for acts contrary to the rights of other States. [23] More specifically, it can be considered a principle of international law that no State has the right to use or permit the use of its territory, including territorial sea, in such a manner as to cause injury in or to the territory of another State. [24] The conclusion is that a State, before constructing or giving permission to construct an artificial island or installation in its territorial sea, will have to examine carefully whether the structure could have any harmful effects for neighbouring States. And if such effects are unavoidable, the coastal State has the duty to negotiate with the State in question what degree of harm will be acceptable, and what damages, if any, the coastal State will have to pay to the other State.

The third set of limitations which international law imposes on the coastal State concerns the construction of artificial islands or installations near the outer limit of the territorial sea. It might well be possible that such a siting affects certain uses of the contiguous part of the high seas or of the adjoining territorial sea of another State. For example, ships might be required to pass such structures at a certain distance. Thus, their mere presence could hinder navigation substantially, especially if there is a narrow shipping lane in that part of the adjoining high seas or foreign territorial sea. In such a case the construction of an artificial island or installation in that area might even not be permitted under international law. In general, the coastal State has to pay due regard to the interests of the legitimate uses of the contiguous part of the high seas and of the adjoining territorial sea when using its territorial sea for the construction of artificial islands or installations.

Except for these three categories of limitations a coastal State is free to build artificial islands and installations in its territorial sea. It is not to be expected that this situtation will change by the forthcoming revision of the law of the sea. The discussion within the U.N. Seabed Committee, and the proposals submitted to it, demonstrate that the sovereignty of the coastal State over its territorial sea will be maintained. The issue of the construction of artificial islands and installations in this area, therefore, did not receive much attention in the Committee. However, Belgium submitted a proposal [25] which, if accepted, would affect the discretionary powers of the coastal State in this respect. It reads as follows:

> "Article (a): The coastal State is entitled to construct artificial islands or immovable installation in its territorial sea; it must not, through such structures, impede access to the ports of a neighbouring State or cause

damage to the marine environment of the territorial seas of neighbouring States.

"Article (b): Before commencing the construction of artificial islands or installations as mentioned in the preceding article, the coastal State shall publish the plans thereof and take into consideration any observations submitted to it by other States. In the event of disagreement, an interested State which deems itself injured may appeal to IMCO, which though not empowered to prohibit the construction may prescribe such changes or adjustments as it considers essential to safeguard the lawful interests of other States".

The proposed article (a) can be considered as expressing rules of general international law. It is, however, incomplete, since it does not include the prohibition of the prevention of unreasonable interference by such structures of innocent passage of foreign ships in general, which would include impediment of access to the ports of neighbouring States. It also does not include the prohibition of unjustifiable interference with the legitimate uses of the contiguous part of the high seas and of an adjoining territorial sea. Furthermore, the limitation to "immovable" installations can be omitted since these rules apply to any type of installation.

The provisions of article (b) on the other hand represent an entirely new approach. They are intended to safeguard the interests of other States by giving them an opportunity to participate in the decision-making process of the coastal State, and by providing recourse to an impartial body in the event of disagreement. In a sense, this is a formulation of the existing obligation of the coastal State to enter into negotiations with neighbouring States in the case that a proposed structure could have damaging effects on the territory of these States. But it goes further in making obligatory the publication of all plans and in providing the appeal to IMCO. There are two objections against this arrangement. First, the requirement of publication of the plans for the construction of any artificial island or immovable installation can be considered an unnecessary administrative burden for the coastal State, especially with respect to those structures which will be situated too far from other States to cause any damage to their territory, including territorial sea, and which cannot possibly interfere with the passage of foreign ships. And secondly, some States will not be willing to publish any plans for structures relating to their national defense. In this connection it is worth mentioning that the Seabed Arms Control Treaty of 1971 does not prohibit the emplacement of nuclear weapons or any other types of weapons of mass destruction as well as structures, launching installations or any other facilities specifically designed for storing, testing or using such weapons, within twelve miles from the baseline from which the territorial sea is measured.[26] Therefore it can be doubted that these provisions will be acceptable. It is of course possible

to exclude certain types of structures from the provisions of the article, or to leave open the possiblility of making a reservation with respect to this article when ratifying the treaty, but that could make the whole article meaningless. Thus, it seems better not to include such an arrangement. For the solution of future conflicts States will have to rely on the traditional means of settlement of disputes.

2.3. In the high seas.

2.3.1. Preliminary remark.

Since artificial islands and installations not only constitute a use of the sea, but of the seabed as well, the legal regimes of both the high seas itself and the bed of the high seas have to be examined in order to be able to determine whether or not their construction is permitted. With respect to the bed of the high seas a further distinction has to be made between that part of the seabed which comes under the regime of the continental shelf, and the part of the seabed beyond the limits of national jurisdiction. Therefore, this section is divided into three subsections. First, the legal regime of the high seas will be dealt with. Then the legal regime of the seabed beyond the limits of national jurisdiction will be examined in view of its implications for the construction of artificial islands and installations in that area. Finally, the regime of the continental shelf will be analyzed.

2.3.2. The legal regime of the high seas.

An artificial island or installation consititutes an exclusive use of a part of the ocean. The word "exclusive" is used here to indicate that the same ocean area cannot be used anymore by others for any purpose. The duration of this exclusive use can vary greatly. Artificial islands, for example, by their vary nature are intended to last for a very long period. They can be considered a permanent use. It should be kept in mind, however, that the concept of permanency is a relative one. It refers to "a long time," varying from years to centuries, and is certainly not used here in the sense of "eternal," since no construction is permanent in such a sense. It is the opposite of temporary, which reflects a notion of a relatively short period, varying from hours to years. It is not possible, however, to indicate exactly where the boundary lies between a permanent and a temporary use.

Many types of installations also are intended to last for a very long period, and can in that respect be assimilated to artificial islands. Moreover, their dimensions too will often be similar to those of artificial islands. Although it will generally be easier to remove an installation than an artificial island after it has been abandoned, the latter one can be removed too if necessary. It can therefore be concluded that the factual situation of artificial islands and permanent installations is identical: they constitute a permanent and exclusive use of a part of the ocean. Although some types of installations can be considered only a temporary use of the sea, the following discussion will focus primarily on those constituting a permanent use. It is assumed that if the latter use can be regarded permissible, a fortiori the former will be permitted.

The answer to the question whether or not an artificial island or installation constitutes a permitted use of the high seas has to be sought in the legal regime of the high seas, which is defined in article 2 of the Geneva Convention on the High Seas.[27] The provisions of this Convention are considered as generally declaratory of established principles of international law.[28] Article 2 reads as follows:

> "The high seas being open to all nations, no State may validly purport to subject any part of them to its sovereignty. Freedom of the high seas is exercised under the conditions laid down by these articles and by the other rules of international law. It comprises, inter alia, both for coastal and non-coastal States:
> 1. Freedom of navigation;
> 2. Freedom of fishing;
> 3. Freedom to lay submarine cables and pipelines;
> 4. Freedom to fly over the high seas.
> These freedoms, and others which are recognized by the general principles of international law, shall be exercised by all States with reasonable regard to the interests of other States in their exercise of the freedom of the high seas".

Since no mention is made of a freedom to construct artificial islands and installations, it is necessary to examine whether or not this is one of the other freedoms recognized by the general principles of international law referred to in the last sentence of the article. However, first attention has to be paid to the question whether or not the principle of the freedom of the high seas a priori prohibits permanent and exclusive uses of ocean areas, since the first sentence of article 2 provides that no State may subject a part of the high seas to its sovereignty.

An inquiry into the nature of some already existing activities on the high seas indicates that international law permits several uses of the high seas which are both permanent and exclusive. The fisheries conducted in some parts of the world by means of equipment embedded in the floor of the sea are a case in point.[29] Other examples are offered by lighthouses built on banks or submerged rocks, and lightships,[30] which in recent years have in several instances been replaced by fixed platforms. These constructions are generally considered as being permitted by international law since they serve important community interests such as safety of shipping, aid to navigation, and meteorological observation. Article 2 of the High Seas Convention itself refers to the freedom to lay submarine cables and pipelines as one of the freedoms of the high seas. This too can be considered a permanent and exclusive use. Finally, international law recognizes the right to construct installations for the exploration of the continental shelf and the exploitation of its

natural resources. This right forms a corollary of the coastal State's sovereign rights over the natural resources of its continental shelf, since the latter rights can only be made effective by means of the operation of such installations, and therefore exists independent from the provisions of article 5 of the Geneva Convention on the Continental Shelf.[31] There is also no reason to assume that a coastal State may only employ installations of the kind denoted by this term in the present paper for the exploitation of its continental shelf, although this term is used in the Continental Shelf Convention. Artificial islands used for the same purposes are equally permitted, the choice of the type of construction being solely dependent upon the particular situation. It should be noted that mining installations, though individually of relatively small dimensions, sometimes occur in clusters occupying large areas of the ocean which therefore cannot be used anymore for other purposes, as in the Gulf of Mexico.[32] The consequences of such a situation for other uses of the high seas are in fact identical to those of one large artificial island occupying the same area. These examples lead to the conclusion that there is no a priori objection against uses of the high seas which are both permanent and exclusive in character, and which occupy relatively large areas.

It is therefore now necessary to turn to the last sentence of article 2 of the High Seas Convention, and to examine whether the construction of artificial islands and installations comes under the "other freedoms which are recognized by general principles of international law." Unfortunately, article 2 gives no further indications as to the purport of those general principles, and the rather cryptic language used has led to different interpretations. On the one hand, it is argued that this passage is intended to convey that only such further uses are permissible which have been expressly recognized by international law. On the other hand it is interpreted as permitting all possible uses which are not clearly condemned by any general principle of international law.[33] Both views still contain a large amount of vagueness when trying to apply them to actual situations. When is a particular use expressly recognized by international law? And when is such a use clearly condemned by any general principle of international law? If one adopts the former view, a new use can probably only become a recognized "freedom" by means of the process of the formation of customary international law. But what, then, is the status of such a use before it becomes a "freedom?" It is either permitted or not permitted, which implies that there must be some criterion to determine this. And what is the difference between a "freedom" and a permitted use which has not yet been recognized as a freedom? This view poses more questions than it solves. Most writers take the other position, interpreting article 2 as permitting all uses of the high seas which are not clearly condemned by international law.[34] State practice, as evidenced by the examples of already existing permanent and exclusive uses cited above, indicates that this view has been generally accepted.

Thus, there is also no a priori objection against considering the construction of artificial islands and installations an exercise of

the freedom of the high sea. Therefore, the permissibility of their construction depends on the concrete situation of each particular case.[35] Two different kinds of limitations are involved here. First, it must be possible to accommodate the construction of an artificial island or installation with other uses. As provided in article 2 of the High Seas Convention, the freedoms of the high seas shall be exercised by all States with reasonable regard to the interests of other States in their exercise of the freedom of the high seas. As a consequence, artificial islands and installations may only be built in areas where they do not interfere unreasonably with, inter alia, navigation, fishing, submarine cables and pipelines and scientific research.[36] How this can be implemented will be discussed at the end of the next subsection. Secondly, according to the second sentence of article 2, any freedom of the high seas should be exercised under the conditions laid down by the High Seas Convention and by the other rules of international law. With respect to the latter, rules relating to the preservation of the marine environment are most relevant here. The construction of artificial islands and installations may not cause harmful effects to the marine environment beyond a reasonably tolerable level. Absolute prohibition of any damage would be unreal since every structure will inevitably have some disturbing effects on the marine environment. What is tolerable depends in part on the value which society attaches to the benefits deriving from the activities on the structure. How this rule can be implemented will also be discussed in the next subsection. Other relevant rules of international law are those governing the legal regime of the seabed. As stated before, an artificial island or installation not only constitutes a use of the sea itself, but of the seabed as well. Therefore, before being able to make a final assessment on the permissibility of their construction, it is necessary to examine their compatibility with the legal regime of the seabed beyond the limits of national jurisdiction, or the continental shelf, depending upon their location.

2.3.3. The legal regime of the seabed beyond the limits of national jurisdiction.

Until very recently the seabed beyond the limits of national jurisdiction could be considered res nullius, and as a consequence could be used for any purpose provided it did not interfere unreasonably with the legitimate uses of the sea above it.[37] However, this situation has been changed as a result of the adoption by the U.N. General Assembly of the Declaration of Principles Governing the Sea-bed and the Ocean Floor and the Subsoil Thereof Beyond the Limits of National Jurisdiction on December 17, 1970.[38] Since this resolution was adopted by a vote of 100 to 0, with 14 abstentions, it can be considered as reflecting the general opinion of the community of States. Without dealing in detail with the legal significiance of resolutions of the U.N. General Assembly it can be observed that these principles at least formulate emerging rules of international law. All States are expected to negotiate in good faith to attain agreement on an international regime for this area, and pending the establishment of such a regime to act in accordance with these principles. The first five operative paragraphs of the resolution state:

"1. The sea-bed and ocean floor, and the subsoil thereof, beyond the limits of national jurisdiction (hereinafter referred to as the area), as well as the resources of the area, are the common heritage of mankind.
2. The area shall not be subject to appropriation by any means by States or persons, natural or juridical, and no State shall claim or exercise sovereignty or sovereign rights over any part thereof.
3. No State or person, natural or juridical, shall claim, exercise or acquire rights with respect to the area or its resources incompatible with the international regime to be established and the Principles of this Declaration.
4. All activities regarding the exploration and exploitation of the resources of the area and other related activities shall be governed by the international regime to be established.
5. The area shall be open to use exclusively for peaceful purposes by all States whether coastal or land-locked, without discrimination, in accordance with the international regime to be established."

As a consequence of this resolution the area in question can no longer be considered res nullius, at least not in all respects. However, it is not at all clear what the exact scope will be of the international regime to be established. As far as the question of the permissibility of the construction of artificial islands and installations in this area is concerned, there are two possibilities. First, it is possible that the scope of the international regime will be limited to the exploration for and exploitation of the natural resources and activities directly related thereto (e.g., storage and transportation). This would imply that the construction of artificial islands and installations employed for these purposes would remain free. Secondly, there is the possibility that the construction of artificial islands and installations for any purpose will fall within the scope of the international regime. As a consequence, all these structures will then be governed by the regime. As stated before, it is not yet clear which approach will be followed, and it is therefore not possible to determine what the present situation is. If the first approach were adopted, there would now be no objection to the construction of an artificial island or installation unrelated to the exploitation of the resources of the area, provided it will be used for peaceful purposes. However, such a structure could still in the future interfere with exploration or exploitation activities, and there is at present no authority to determine if this future interference would be unjustifiable or unreasonable. If the second approach would be adopted the present situation is even more complex. It is very likely that the construction of artificial islands and installations unrelated

to the exploitation of the resources of the area will be permitted under the future regime, but there is no indication of what standards will be applied in deciding whether or not the building of these structures will be permitted. The present situation stresses the importance of reaching agreement on the international regime at an early date.

The final conclusion consequently is that present international law does not a priori object to the construction of artificial islands and installations in the high seas beyond the limits of national jurisdiction, although the exact situation is not entirely clear as a result of the uncertainties caused by the recent developments with respect to the legal regime of the seabed beyond the limits of national jurisdiction.

It is therefore more important to focus attention on what arrangements can be made for the future. This will depend primarily on the legal regime to be established for the seabed beyond the limits of national jurisdiction (hereinafter referred to as international seabed area). During the discussions within the U.N. Seabed Committee little attention has been paid to the issue of artificial islands and installations in the international seabed area, and only a few proposals submitted to the committee dealt with it. As discussed before, two approaches can be adopted with respect to this problem. On the one hand it is possible to limit the scope of the international regime to the exploration for and exploitation of the natural resources and activities directly related thereto, thus maintaining the freedom to construct artificial islands and installations, except when they are to be employed for activities related to the exploitation of the resources of the area. On the other hand it is possible to extend the scope of the international regime to all structures in the area. The first approach was represented in the working paper submitted by Ecuador, Panama, and Peru.[39] The relevant articles of this proposal read as follows:

> "Article 19. The following freedoms shall be exercised on the international seas:...
> (4) freedom to emplace artificial islands and other installations permitted under international law, without prejudice to the provisions of article 24;...
> Article 24: The emplacement of artificial islands or any other type of installations apart from submarine cables and pipelines shall be subject to international regulations."

This proposal makes it clear that in the first approach it is still perfectly possible to make the construction of artificial islands and installations subject to international regulation of some kind, e.g., by including detailed provisions on this matter in a general treaty on the law of the sea, or by conferring on an international organization the power to prescribe international standards to be complied with by all States.

The second approach was adopted by Belgium in its working paper on artificial islands and installations.[40] It stated:

> "Article (e): Any construction of an artificial island or immovable installation on the high seas beyond the limits of the continental shelf shall be subject to the authority and jurisdiction of the international machinery for the seabed. The international authority may authorize a State to erect such islands or installations and delegate jurisdiction over such structures to that State."

There are two reasons for preferring this second approach. First, since there is no doubt that the international machinery to be established will have authority over the exploration, exploitation, and directly related activities of the international seabed area, an important number of artificial islands and installations, namely those employed for these activities, will already come under the authority of the international machinery. Second, since all artificial islands and installations can possibly interfere with exploration or exploitation it is only logical to confer on the international machinery some degree of control over the construction of all artificial islands and installations. In the case that the international machinery would not possess the technical expertise necessary to exercise this authority, it could delegate its responsibilities to another international organization, e.g., the Intergovernmental Maritime Consultative Organization (I.M.C.O.).

Adoption of this second approach implies that a State wishing to construct an artificial island or installation for any purpose in the international seabed area needs the consent of the international machinery to do so. The international machinery should grant its consent if the structure will not unreasonably preclude or interfere with exploitation activities, subject to compliance by the State in question with international standards concerning the construction of artificial islands and installations in the area. These international standards will safeguard the interests of the other legitimate uses of the high seas, the exclusive rights to the natural resources of the international seabed area, and the preservation of the marine environment. The State which has been authorized by the international machinery to construct and operate an artificial island or installation should be held responsible in case of noncompliance with the international standards.

2.3.4. The legal regime of the continental shelf.

Not only the question of the extent of the continental shelf, but also the scope of the rights of the coastal State over its continental shelf is a matter which is far from clear. The present discussion will be based on the coastal State's authority as defined in the Continental

Shelf Convention, although it is clear that many States claim a more comprehensive authority; recent developments in the U.N. Seabed Committee point in this direction too. But since the International Court of Justice, in the North Sea continental shelf cases, concluded that the first three articles of the Continental Shelf Convention can be regarded as reflecting rules of customary international law,[41] they provide a firm starting point.

Article 2 of the Convention provides that the coastal State exercises over the continental shelf sovereign rights for the purpose of exploring it and exploiting its natural resources. According to article 3, these rights do not affect the legal status of the superjacent waters as high seas. As a corollary of its rights over the continental shelf, the coastal State is entitled to construct artificial islands and installations necessary for the exploration and exploitation of the shelf, since the coastal State can only make its rights effective by means of such structures. As a consequence of the exclusiveness of the coastal State's rights, other States may not construct facilities on the continental shelf of the coastal State for the purpose of exploring it and exploiting its resources without the consent of the coastal State. The rights of the coastal State are thus restricted to the exploration and exploitation of the natural resources of the continental shelf. It should be pointed out that these rights can be interpreted as including control over activities related to exploitation, e.g., storage and transport. However, except for those rights, the continental shelf is still regarded as res nullius, and the overlying waters still constitute high seas. There is therefore no a priori objection against the construction of artificial islands and installations for purposes other than the exploration and exploitation of the natural resources of the continental shelf and related activities. They can be constructed by all States, subject to the requirements of reasonable regard to the interests of the other legitimate uses of the high seas, no unjustifiable damage to the marine environment, and no unreasonable interference with the exclusive rights of the coastal State over its continental shelf.

This last requirement, however, makes the situation extremely complicated in case a State intends to build an artificial island or installation on the continental shelf of another State, for purposes not related to the exploitation of the natural resources of the continental shelf. Who is to decide whether or not the structure in question will interfere with the exclusive rights of the coastal State? And what criteria should be used to determine this? The concept of interference could be interpreted as to include possible future interference: if the facility would not interfere with present exploitation since there is no such activity in the proposed area yet, it is still possible that it would interfere with future exploitation activities. Such an interpretation would in fact enable the coastal State to consider the construction of any artificial island or installation an interference with its exclusive rights. But even without such an interpretation, it will be clear that the coastal State has a large degree of discretion in determining

whether or not a structure will interfere "unreasonably." This comes in fact close to the situation that the consent of the coastal State has to be obtained for the construction, although no such power is conferred on the coastal State by the Continental Shelf Convention.

The present situation corresponds with the trend to expand the rights of the coastal State with respect to the exploration, conservation, and exploitation of the natural resources and related activities in large areas off its coast. Most proposals in this direction are not based on the continental shelf concept, but envisage the creation of an economic zone, or patrimonial sea, extending beyond the territorial sea to a certain distance and/or depth. Although there exist substantial differences of opinion among the members of the U.N. Seabed Committee on the exact scope and extent of the coastal State's rights in such an area, it is likely that the Law of the Sea Conference will result in the creation of an economic zone extending from the outer limit of the territorial sea (the breadth of which will probably be fixed at twelve miles) to a distance of, e.g., 200 miles from the coast. In view of the fact that on the one hand the construction of artificial islands and installations in the zone could have substantial impacts on the exploitation activities, and on the other hand such structures may be used for the exploitation of the zone and other economic activities of interest to the coastal State, it can be considered appropriate to confer on the coastal State the right to regulate the construction and operation of all offshore facilities in its economic zone.

Several proposals submitted to the U.N. Seabed Committee dealt with the issue of artificial islands and installations in this area. Although some of these proposals only used the term "installation," it can be assumed that the term is employed in a broad sense, and includes artificial islands. For instance, article 1, paragraph 3, of the United States proposal on the coastal seabed economic area[42] states that the coastal State shall have the exclusive right to authorize and regulate in the coastal seabed economic area or the superjacent waters, the construction, operation, and use of offshore installations affecting its economic interests. In article 5 the term installations is defined as referring to all offshore facilities, installations, or devices other than those which are mobile in their normal mode of operation at sea.[43]

The working paper submitted by Ecuador, Panama, and Peru[44] contains a provision on offshore facilities in the "adjacent sea," which is defined in article 1 as the sea adjacent to the coast up to a limit not exceeding a distance of 200 nautical miles. It reads as follows:

> "Article 12. The emplacement and use of artificial islands and other installations and devices on the surface of the sea, in the water column and on the bed or in the subsoil of the adjacent sea shall be subject to authorization and regulation by the coastal State."

The draft articles submitted by Colombia, Mexico, and Venezuela[45] state:

> "Article 7. The coastal State shall authorize and regulate the emplacement and use of artificial islands and any kind of facilities on the surface of the sea, in the water column and on the seabed and subsoil of the patrimonial sea."

Belgium, still using the term "continental shelf," included the following provisions in its working paper on artificial islands and installations:[46]

> "Article (c): The coastal State may, on the conditions specified in the following article, authorize the construction on its continental shelf of artificial islands or immovable installations serving purposes other than the exploration or exploitation of natural resources... Article (d): Before commencing the construction of artificial islands or installations as mentioned in article (c), the State shall publish the plans thereof and take into consideration any observations submitted to it by other States. In the event of disagreement, an interested State which deems itself injured may appeal to[47]..., which shall prescribe where appropriate, such changes or adjustments as it considers essential to safeguard the lawful interests of other States."

All Proposals concur in conferring on the coastal State the right to regulate the construction of artificial islands and installations in the area. However, the Belgian proposal qualifies this right substantially by stating the a State which deems itself injured by the construction has the possibility to appeal to an independent organization which could prescribe changes or adjustments. The proposal does not state explicitly whether or not this organization may prohibit the construction altogether, and in this respect it differs from the provisions proposed by Belgium on the construction of artificial islands and installations in the territorial sea. There it was expressly stated that the organization (IMCO) would not be empowered to prohibit the construction. The omission of this provision here would imply that the organization would have this power. However, it has to be questioned whether such an arrangement is necessary. Many of the activities in the economic zone could possibly in some way or another injure other States. Therefore the new treaty on the law of the sea will have to contain detailed provisions to ensure that these activities will be conducted with reasonable regard to the

interests of other States. This could be achieved by providing that all States must comply with international standards to be promulgated by an independent organization.[48] Such an arrangement would also with respect to the construction of artificial islands and installations provide sufficient guarantees for the protection of the interests of other States.

3. SOME OTHER INTERNATIONAL LEGAL ASPECTS

3.1. The legal regime of the waters surrounding artificial islands and installations.

It might be asked if the waters surrounding artificial islands and installations can have the legal status of territorial sea. Starting point for the examination of this question has to be article 10, paragraph 1 of the Territorial Sea Convention, which contains a definition of an island. For, if artificial islands and installations could qualify as islands within this definition, the above question is answered in the positive.[49] Article 10, paragraph 1 reads as follows:

> "An island is a naturally formed area of land, surrounded by water, which is above water at high-tide."

This text is at least clear with respect to installations, which cannot possibly be included in this definition. But some writers still maintain that artificial islands could have their own territorial sea. Professor Francois for example, at the time special rapporteur on the law of the sea of the International Law Commission (I.L.C.) and expert at the Conference on the Law of the Sea at Geneva in 1958, is of the opinion that artificially created elevations of the seabed which have the essential characteristics of an island, have their own territorial sea.[50] The problem with regard to the definition of article 10, paragraph 1 of the Territorial Sea Convention is what exactly is implied by the words "naturally formed." If one considers the genesis of this article one has to go back to the Codification Conference of the League of Nations at the Hague in 1930. This conference indeed, did not result in a treaty on the legal regime of the territorial sea, but the report of Sub-Committee No. II of the Second Committee which was included in the Final Act of the Conference was generally considered as formulating the costomary law in force at that time.[51] In this report appears the following passage:[52]

> "Every island has its own territorial sea. An island is an area of land, surrounded by water, which is permanently above high-water mark."

An observation was added that the definition of the term island did not exclude artificial islands, provided these were true portions of the territory and not merely floating works, anchored buoys, etc.

It is interesting to note here that Gidel, writing a few years

later, did not agree with this definition. He defined an island as a natural elevation of the seabed, surrounded by water, which is above water at high tide and the natural conditions of which permit the stable residence of organized groups of human beings. He assimilated to natural islands artificial islands which met the same conditions and the creation of which, by the action of natural phenomena, was provoked or accelerated by means of works. But this assimilation would only have the legal effect of conferring on the artificial island its own territorial sea in the case that the island was at least partially situated within the territorial sea.[53]

The definition of the Hague Conference of 1930 is important because it was adopted by Francois in his first report on the regime of the territorial sea to the I.L.C. in 1952.[54] During the discussions at the 6th session of the I.L.C. in 1954 there appeared to be quite a few objections against the possibility of artificial islands having their own territorial sea.[55] However, these objections were more related to very small artificial islands, like raised reefs and rocks, and to installations. With respect to the latter there existed unanimity, when the draft articles on the continental shelf were formulated, that they could never have their own territorial sea, but only a limited safety zone. With respect to larger artificial islands created by means of dumping sand and gravel and the like, which look like natural islands and, by their very nature, are meant to be permanent, still existed the possibility that they could have their own territorial sea. This can be drived from the fact that the text of article 10 of the I.L.C. Draft of 1956 concerning this aspect was identical to the text proposed by Francois. The commentary to this article points in this direction too.[56] No government made any comments on this draft article.

At the Geneva Conference of 1958 the United States submitted a proposal to amend the draft article.[57] In this proposal an island was defined as "a naturally formed area of land." The explanation which was added to the amendment declared that the I.L.C.'s definition of an island included artificially placed land, which would be undesirable. The United States proposal was adopted at the conference, and thereby became the present article 10, paragraph 1, of the Territorial Sea Convention, without any discussion on the exact meaning of the words "naturally formed."

One could maintain that "naturally formed" is not the same as "formed by nature." The former could imply that it must be composed of natural substances (sand, gravel), and thus it may also have been constructed with those materials, while the latter excludes any human intervention. Such a subtle distinction seems to be farfetched, and is also not in agreement with the explanation given to the United States amendment proposal. Therefore, it can be concluded that also artificial islands under existing international law do not have their own territorial sea.[58]

A totally different question is whether or not it would be desirable that in the future offshore facilities have their own territorial sea. This suggestion may be expected with respect to, e.g., large, inhabited artificial islands.[59] The answer to this question depends on what is at

present the rationale of the territorial sea. Since the economic interests of States in the natural resources off their coasts are already, or will be, protected by the existence of areas in which they have exclusive jurisdiction over those resources, the primary raison d'etre of the territorial sea seems to be the protection of the security of the coastal States. The protection of this interest in the case of artificial islands, however, does not seem to require a marginal belt in which a State has sovereign rights as in the territorial sea, and especially not one as wide as, e.g., twelve miles. It can be added that the proposals submitted to the U.N. Seabed Committee which deal with the issue of artificial islands and installations concur in denying any such facility its own territorial sea.[60]

However, it is obvious that there will be a need for protection of offshore structures. This need could be met by creating safety zones like those that are permitted for mining installations on the continental shelf.[61] Within these zones the coastal State is entitled to take measures necessary for the protection of those installations. The safety zones may extend to a distance of 500 metres around the installations, measured from each point of their outer edge, and must be respected by ships of all nationalities.[62] Although at present international law does not state explicitly that artifical islands and installations, other than those used for exploring the continental shelf and exploiting its natural resources, may have safety zones there seems to be no reason why such zones would not be permitted. When an offshore facility has been created it is in the interest of both the users of the contiguous sea area and the structure itself that such a safety zone will be established. Whether a safety zone of 500 metres will be sufficient in all cases has still to be decided by experts. Nevertheless it deserves recommendation to make explicit provisions on these matters in a new treaty on the law of the sea and to state more specificially the measures which the coastal State may take in these zones. This has already been proposed by Belgium and the United States in the U.N. Seabed Committee. Belgium suggested in its working paper including a provision stating that artificial islands and installations on the continental shelf may be surrounded by safety zones extending not more than 500 metres.[63] The United States tabled the following draft articles (related to the coastal seabed economic area):[64]

> "Article 1, paragraph 4. The coastal State may, where necessary, establish reasonable safety zones around such offshore installations in which it may take appropriate measures to protect persons, property, and the marine environment. Such safety zones shall be designed to ensure that they are reasonably related to the nature and function of the installation. The breadth of the safety zones shall be determined by the coastal State and shall conform to international standards in existence or to be established pursuant to article 3. ...
> Article 3, paragraph 2. States shall ensure compliance with international standards in

existence or to be promulgated by Inter-Governmental Maritime Consultative Organization in consultation with the Authority:

(a) regarding the breadth, if any of safety zones around offshore installations;

(b) regarding navigation outside the safety zone, but in the vicinity of offshore installations."

The inclusion of such provisions in a new treaty on the law of the sea would strike a reasonable balance between the interests of the activities on offshore facilities themselves on the one hand and the interests of the other uses of the marine environment on the other. They should not only be applicable to structures in the economic zone, but also to those in the international seabed area.

3.2 Effects on the delimitation of the territorial sea.

Another question is whether or not artificial islands and installations which are situated wholly or partly within the territorial sea can affect the delimitation of the territorial sea. Normally the territorial sea is measured from the low-water line along the coast.[65] However, the Territorial Sea Convention contains some provisions concerning the situations which depart from normal. Article 4 provides that in certain specified cases the method of straight baselines joining appropriate points may be employed in drawing the baseline from which the breadth of the territorial sea is measured. According to paragraph 3 of this article, however, those straight baselines may not be drawn to and from low-tide elevations, unless lighthouses or similar installations which are permanently above sea level have been built on them. According to article 8 the outermost permanent harbor works which form an integral part of the harbor system shall be regarded as forming part of the coast for the purpose of delimiting the territorial sea. The Continental Shelf Convention too contains a provision which is relevant here. In relation to mining installations article 5, paragraph 4, stipulates that their presence does not affect the delimitation of the territorial sea of the coastal State.

These provisions clearly show that there exist strong reservations with respect to permitting artificial works to affect the delimitation of the territorial sea. The exceptions to the general rule are limited and carefully defined. Seen in that light the provision regarding mining installations on the continental shelf could even be called superfluous; the situation would have been the same when the provision was not expressly included. The conclusion is therefore that artificial islands and installations do not affect the delimitation of the territorial sea,[66] with the exception of facilities which qualify as permanent harbor works which form an integral part of the harbor system.[67] It can be very difficult to determine this in a particular case since the provision is rather vague.

Another question arises from the article 11 of the Territorial Sea

Convention. It provides that where a low-tide elevation[68] is situated wholly or partly at a distance not exceeding the breadth of the territorial sea from the mainland or an island, the low-water line of that elevation may be used as the baseline for measuring the breadth of the territorial sea. When such a low-tide elevation is used as a site for the construction of an artificial island (which is very likely), and the low-water line of the artificial island is further seaward than the low-water line of the original low-tide elevation was, which line has to be used as the baseline for measuring the breadth of the territorial sea? It seems that this has to be the original low-water line, but it could be a complex sitation since the low-water line of those elevations is often gradually shifting.

The fact that at the time of the conclusion of the Territorial Sea Convention only a few, carefully defined, exceptions were permitted deviating from the normal way of delimiting the territorial sea indicates that at that time the drafters had in mind a rather narrow territorial sea. For the situations in which that narrow territorial sea would offer too little space to provide adequate protection of certain interests of the coastal State (e.g., harbor works extending far into the sea, roadsteads) special rules were made. In this context one may think of the contiguous zone) which was created to give the coastal State an additional belt off its shore to protect certain interests.[69] As at present more or less generally a substantially broader territorial sea is recognized or claimed, the rationale of many of these exceptions (and of the contiguous zone) has disappeared, since the area where the coastal State can exercise full jurisdiction is broad enough. Therefore it would be preferable to delete these exceptions when revising the rules relating to the delimitation of the territorial sea. However, the delegations of Malta and Uruguay have already submitted proposals to the U.N. Seabed Committee in which these provisions are maintained,[70] mostly in exactly the same wording as they are now in the Territorial Sea Convention.

3.3. Jurisdiction to regulate activities on artificial islands and installations.

When an artificial island or installation is situated in the internal waters or territorial sea the coastal State is entitled to regulate the activities on the island by virtue of its sovereignty over these areas;[71] the territorial jurisdiction the coastal State may exercise here is as full and complete as the jurisdiction it has on its land territory. However, as a consequence of the fact that artificial islands and installations cannot be legally assimilated to islands[72] a State cannot exercise this territorial jurisdiction with respect to activities on facilities situated in the high seas. Here, the basis on which its competence is founded has to be a different one. At present, international law does not provide expressly formulated rules for this situation, except in the case of structures on the continental shelf which are operated for the exploration or exploitation of the natural resources of the shelf and activities directly related thereto. These fall under the jurisdiction of the coastal State according to article 5 paragraph 4 of the Continental Shelf Convention. This competence of the coastal State is quasi-territorial,

since it depends on the sole fact that the structure in question is located within the boundaries of the coastal State's continental shelf. There is one other category of constructions with respect to which the coastal State may have territorial jurisdiction. Article 9 of the Territorial Sea Convention provides the roadsteads which are normally used for the loading, unloading and anchoring the ships, and which would otherwise be situated wholly or partly outside the outer limit of the territorial sea, are included in the territorial sea. The coastal State must clearly demarcate such roadsteads and indicate them on charts together with their boundaries, to which due publicity must be given. An offshore facility used as a deep draft port fulfills essentially the same functions as a roadstead, and can therefore be legally assimilated thereto, especially when the facility has been constructed to replace an existing roadstead.[73] However, from the language of article 9 can be derived that this is only possible in the case of offshore structures located not far beyond the outer limit of the territorial sea. It should also be pointed out that this does not imply that an artificial island or installation employed as a deep draft port has its own territorial sea; it merely indicates that the area actually used for loading and unloading of ships comes under the regime of the territorial sea, giving the coastal State complete territorial competences over the facility.

Failing similar provisions with respect to artificial islands and installations for other purposes, a State may only exercise jurisdiction over activities on such structures when (a) the activities are conducted by nationals of that State; and (b) the activities affect certain legal interests of that State.[74] This competence, however, is not exclusive; it is possible that other States have jurisidction over the same activities or occurrences. There is, however, one exception to this last remark. When a State itself or a State-owned enterprise constructs and operates an artificial island or installation the link with that particular State is so strong that it can be considered as having the exclusive competence to regulate all activities conducted thereon. This consideration would not only be based on the principle of nationality, but also on the fact that the interests referred to under (b) supra are involved here, e.g., the property rights of that State to the facility. There remains the problem of which State's laws are applicable with respect to activities on artificial islands and installations constructed not under the authority or responsibility of a State.[75] The concept of personal jurisdiction, based on the nationality of the individuals involved, offers only a partial solution, since it would not cover all activities and could also lead to competing claims of several States. In the case of facilities constructed just outside the territorial sea, or on the continental shelf in general, one could take the view that the interests of the coastal State are always, by their mere occurrence, affected by the activities on the facility. Partly on these considerations the Netherlands based its much-discussed North Sea Installations Act of 1964, by which it extended its jurisdiction over all installations on the Netherlands continental shelf.[76] The correctness of this view will not be dealt with here; suffice it to say that the imperfections of the present system make it clear that it is highly desirable to include provisions on this issue in the new treaty on the law of the sea to be concluded.

If the exclusive right to authorize the construction and operation of artificial islands and installations in the Economic Zone will be conferred on the coastal State, it is only logical to provide that the structures fall under the exclusive jurisdiction of the coastal State. With respect to artificial islands and installations built in the international seabed area, the provision could be included that they fall under the exclusive jurisdiction of the State which has been authorized to construct them. Under such an arrangement it would always remain possible for these States to waive their exclusive jurisdiction with respect to a particular artificial island or installation in an agreement with another State in which that State is permitted to exercise exclusive jurisdiction over the structure in question.

ANNEX. DRAFT ARTICLES ON ARTIFICIAL ISLANDS AND INSTALLATIONS.

Article A. Artificial Islands and Installations in the Territorial Sea.

1. The construction and operation of artificial islands and installations in the territorial sea may not prevent or unreasonably hamper the innocent passage of foreign ships, may not unjustifiably interfere with uses of the contiguous high seas or territorial sea of another State, and may not result in damage to or in the territory, including internal waters and territorial sea, of other States.

2. Artificial islands and installations do not possess the status of islands and their presence does not affect the delimitation of the territorial sea.

Article B. Artificial Islands and Installations in the Economic Zone.

1. The coastal State has the exclusive right to regulate the construction and operation of artificial islands and installations in the Economic Zone.

2. The coastal State shall ensure that the construction and operation of artificial islands and installations will not unjustifiably interfere with other activities in the marine environment, and shall ensure compliance with international standards established by the Inter-Governmental Maritime Consultative Organization to prevent such interference.

3. The coastal State shall take appropriate measures to ensure that the construction and operation of artificial islands and installations will not result in unjustifiable damage to the marine environment, and shall ensure compliance with international standards established by the Inter-Governmental Maritime Consultative Organization to prevent such damage.

4. The coastal State is entitled to establish safety zones around artificial islands and installations and to take in those zones measures necessary for their protection and for the preservation of the marine environment. The breadth of the safety zones shall be determined by the coastal State in conformity with international standards established by the Inter-Governmental Maritime Consultative Organization.

5. Such artificial islands and installations, though under the jurisdiction of the coastal State, do not possess the status of islands, and they have no territorial sea of their own.

Article C. Artificial Islands and Installations in the International Seabed Area.

1. The consent of the International Seabed Authority is required for the construction and operation of artificial islands and installations in the International Seabed Area.

2. The State which has been authorized to construct and operate an artificial island or installation shall ensure that its construction and operation will not unjustifiably interfere with other activities in the marine environment, and shall ensure compliance with international standards established by the International Seabed Authority to prevent such interference.

3. The State which has been authorized to construct and operate an artificial island or installation shall take appropriate measures to ensure that its construction and operation will not result in unjustifiable damage to the marine environment, and shall ensure compliance with international standards established by the International Seabed Authority to prevent such damage.

4. The State which has been authorized to construct and operate an artificial island or installation is entitled to establish a safety zone around it and to take in that zone measures necessary for its protection and for the preservation of the marine environment. The breadth of the safety zone shall be determined by that State in conformity with international standards established by the International Seabed Authority.

5. Such artificial islands and installations, though under the jurisdiction of the State which has been authorized to construct and operate them, do not possess the status of islands, and they have no territorial sea of their own.

NOTES

1. The World's Largest Vessel, the 447.00 DWT oil tanker Globtik Tokyo, has a draft of 84 feet. Ocean Industry, December 1972, p. 57.

2. According to a report of the U.S. Maritime Administration, no ports on the United States East Coast can service fully loaded ships larger than 80.000 DWT. Hearings on Outer Continental Shelf Policy Issues Before the Senate Committee on Interior and Insular Affairs, 92nd Cong., 2nd Sess., pt. 3, p. 1336 (1972).

3. H.G. Knight, International legal aspects of deep draft harbor facilities, Journal of Maritime Law and Commerce 1973, pp. 367-371.

4. Christian Science Monitor, December 17, 1973. On this project see also J. Timpson, Practicality and potential of offshore artificial island shipping terminals, in Preprints, Marine Technology Society, 7th Annual Conference, Washington 1971, pp. 221-231.

5. Ocean Science News, May 5, 1972.

6. Ocean Industry, August 1973, pp. 21-24. See also Offshore Services, July 1973, pp. 22-25.

7. Hydrospace, November 1967, p. 29.

8. R. C. Schmitz and W.T. Aldrich, Underwater mining of aragonite sands in the Bahamas, in Preprints, Marine Technology Society, 6th Annual Conference, Washington 1970, pp. 973-982.

9. Uses of the Sea. Study prepared by the Secretary-General, U.N. Doc. E/5120, 28 April 1972, p. 15.

10. Sea Island Project. The Building of islands in the open sea offers possibilities for industrial development, Bos Kalis Westminster Dredging Group N.V., 1972. Ocean Industry, April 1973, pp. 187-194 contains a summary of the study, on which the following description is based.

11. Offshore Services, April 1973, p. 62 and May 1973, p. 34.

12. D. P. O'Connell, International Law, vol. 1, 2nd ed., London 1970, p. 483.

13 Idem.

14. U.N.T.S., vol. 516, p. 205; hereinafter referred to as Territorial Sea Convention.

15. O'Connell, op. cit. note 12, p. 484.

16. Articles 1 and 2 of the Territorial Sea Convention.

17. Article 1 para. 2 of the Territorial Sea Convention.

18. Article 14 of the Territorial Sea Convention.

19. Article 15 of the Territorial Sea Convention.

20. Article 16 of the Territorial Sea Convention.

21 M.W. Mouton, The Continental Shelf, The Hague 1952, p. 228.

22. I.C.J. Reports 1949, p. 28.

23. Idem, p.22.

24. Cfr. the Trail Smelter Arbitration, a case of air pollution between Canada and the United States. Text in American Journal of International Law 1941, pp. 684 et seq., particularly p. 713.

25. Artificial Islands and Installations: Working paper submitted by Belgium, U.N. Doc. A/AC. 138/91, 11 July 1973.

26. Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Seabed and Ocean Floor and in the Subsoil Thereof (1971), Articles I and II. International Legal Materials 1971, p. 145.

27. U.N.T.S., vol. 450, p. 82; hereinafter referred to as High Seas Convention.

28. See Preamble of the High Seas Convention.

29 On these fisheries see O. de Ferron, Le droit international de la mer, vol. 2, Paris 1960, pp. 79-82.

30. See C.J. Colombos, International law of the sea, 6th ed., London 1967, pp. 127-128.

31. U.N.T.S., vol. 499, p. 311; hereinafter referred to as Continental Shelf Convention.

32 On this situation see H.G. Knight, Shipping safety fairways: conflict amelioration in the Gulf of Mexico, Journal of Maritime Law and Commerce 1969, pp. 3 and 19-20.

33. J.H.W. Verzijl, International law in historical perspective,vol. 4, Leyden 1971, p. 96.

34. Verzijl, op.cit. note 33, p. 96. M.S. McDougal and W.T. Burke, The public order of the oceans. A contemporary international law of the sea, New Haven and London 1962, pp. 744 and 763. M. Bos, La liberte de la haute mer: quelques problemes d'actualite, Netherlands International Law Review 1965, p. 350.

35. McDougal and Burke, op.cit. note 34, p. 751.

36. It has been proposed that activities which are necessarily sea-based should have priority over other uses of ocean space. W. Riphgen, International legal aspects of artificial islands, International Relations 1973, p. 333.

However, in the opinion of the present writer there is no need for such a priority rule. All uses of ocean space should be equal. In a particular case priority should be determined by weighing the interests of the uses involved.

37. Verzijl, op.cit. note 33, p. 277.

38. U.N.G.A. RES/2749 (XXV).

39 Draft Articles for Inclusion in a Convention on the Law of the Sea, Working paper submitted by the delegations of Ecuador, Panama and Peru, U.N. Doc. A/AC.138/SC.II/L.27, 13 July 1973.

40. Supra, note 25.

41. I.C.J. Reports 1969, p. 39.

42. United States of America: Draft articles for a chapter on the rights and duties of States in the Coastal Seabed Economic Area, U.N. Doc. A/AC. 138/SC.II/L.35, 16 July 1973.

43. In the draft articles submitted by Argentina, also the term "installations" is used. Article 24 of this draft makes the establishment of installations on the continental shelf by third States or their national subject to the permission of the coastal State; see U.N. Doc. A/AC.138/SC.II/L37, 16 July 1973.

44. Supra, note 39.

45. Columbia, Mexico and Venezuela: draft articles of treaty, U.N. Doc. A/AC.138/SC.II/L.21, 21 April 1973.

46. Supra, note 25.

47. In the Belgian proposal, a footnote inserted here states: "It would seem advisable not to specify at present the body which would be competent to entertain such an appeal. It could be the tribunal of the international machinery, if that was though appropriate, or there could be the triple possibility of recourse to I.M.C.O. in respect of complaints affecting navigation, to the regional fisheries organization in respect to those concerning fishing, or to the international authority for the marine environment pollution, if one is established."

48. These international standards can essentially be the same as those for the International Seabed Area.

49. All islands, irrespective of their size, have a territorial sea. O'Connell, op.cit. note 12, p. 480.

50. J.P.A. Francois, Grondlijnen van het volkenrecht, 3rd ed., Zwolle 1967. p. 76. He does not define what the "essential characteristics of an island" are.

51. D.H.N. Johnson, Artificial islands, The International Law Quarterly 1951, pp. 212-213.

52. League of Nations Doc. C 230, M 117, 1930 V.

53. G. Gidel, Le droit international public de al mer, vol. 3, Paris 1934, p. 684. Johnson, op.cit. note 51, p. 214, does not preclude the possibility of artificial islands having their own territorial sea. For the same opinion, see Mouton, op.cit. note 21, p. 239.

54. Yearbook of the International Law Commission 1952, vol. 2, p. 36.

55. Idem 1954, vol. 1, pp. 90-94.

56. Idem 1956, vol. 2, p. 270.

57. U.N. Doc. A/Conf.13/C.1/L.112.

58. H. Charles, Les iles artificielles, Revue Generale de Droit International Public 1967, pp. 364-365. However, Tonga seems to claim a 12-mile territorial sea for the Minerva Reefs which have been partly raised above sea level. See F.M. Auburn, Some legal problems of the commercial exploitation of manganese nodules in the Pacific Ocean, Ocean Development and International Law Journal 1973, p. 196.

59. R. Young, The Geneva Convention on the Continental Shelf, American Journal of International Law 1958, p. 737.

60. See article (c) of the Belgian working paper, supra note 25; article 1 para. 5(b) of the U.S. draft articles, supra note 42, and article 9 of the Preliminary draft articles on the delimitation of coastal State jurisdiction in ocean space, submitted by Malta, U.N. Doc. A/AC.138/SC.II/L.28.

61. Article 5 para. 2 of the Continental Shelf Convention.

62. Article 5 para. 3 of the Continental Shelf Convention.

63. Supra note 25, article (c).

64. Supra note 42.

65. See article 3 of the Territorial Sea Convention.

66. Charles, op.cit. note 58, p. 364. The U.S. Draft (article 1 para. 5[b]), supra note 42, and the Maltese draft (article 4 para. 4), supra note 60, propose to include such a provision.

67. It is probably not necessary for these structures to be physically connected with the shore.

68. A low-tide elevation is defined in the same article as a naturally formed area of land which is surrounded by and above water at low-tide but submerged at high-tide.

69. Article 24 of the Territorial Sea Convention.

70. Articles 4 and 7 of the Maltese draft, supra note 60; and articles 5, 9 and 13 of the draft articles submitted by Uruguay, U.N. Doc. A/AC.138/SC.II,

71. See supra, sections 2.1. and 2.2.

72. See supra, section 3.1.

73. Knight, op.cit. note 3, p. 388-389.

74. O'Connell, op.cit. note 12, vol. 2, p. 602.

75. This involves the question whether only States, or also individuals have the right to construct artificial islands and installations in the high seas. Since article 2 of the High Seas Convention refers only to States, the freedoms of the high seas are to be regarded as rights of States. As a result, individuals wishing to construct an artificial island or installation in the high seas can only do so under the authority of a State willing to accept the responsibility. Individuals not acting under the authority or responsibility of a State cannot legally be protected against the actions of a third State, since they cannot invoke the freedom of the high seas against that State and there is no State obliged to protect them.

76. H. F. van Panhuys and M. J. van Emde Boas, Legal aspects of pirate broadcasting. A Dutch approach, American Journal of International Law 1966, pp. 303-341, particularly pp. 333-334.