

February 5, 1976
10:00 AM

NSG We're going to move on to in our program and...to let me get my own copy of it. Well, as I understood it, are we going to go to the manuscript or are we simply going to call on Sidney to ...

EMB I would suggest that we call on Sidney...because he provides excellent background material for *the discussion of Section 2 Part 2*

NSG Yes. Well we have two, Section II, part II. We also have two papers by Sidney Holt that you have all seen, "Food from the Ocean" and a reprint of his "Marine Fisheries and World Food Supplies". I assume, Sidney, are you assuming we will have read these?

Holt I am assuming you will have read the the dialogue discussion paper...the other one is just background for anyone who is interested to look at the reasons why this *I made some statements* is in here.

NSG Very good. ~~Would you then~~ ~~My friends~~, might I mention that these microphones are fixed, they're not to amplify your voice, they're ^{primarily} ~~merely~~ for recording. Even if they're not pointing at you, our audio technician has them adjusted, ^{in such a way} ~~situated~~ so that they'll pick up your voices. Don't worry about them. Just ignore them, in other words. Sidney...

Holt Some of us are already conditioned.. *to do this*

NSG No need to lean forward, just speak naturally.

Holt Paul Engo has my ^{annotated} ~~copy~~ copy of my paper. Perhaps he's still down there reading it so...I'll start thinking again about this. Perhaps I've overloaded this with statistics, but I ^{did} feel I wanted to give an ~~f~~actual background to the discussion this morning. I was reminded by Professor ~~Archer~~ last night at dinner that manganese ~~modules~~ are also a living, renewable

Holt resource, at least according to the latest theories of their formation through bacterial ecretion in the deep ocean. But there we are dealing with time ~~and~~ constants of tens of millions of years ~~and~~ ^{whereas} of course the ones I'm talkin about ~~and~~ have time constants of decades or centuries. However, ~~it's not~~, it occurs to me that it's not entirely irrelevant because I understand that the maintenance of the manganese nodules at the surface in the deep ocean is in fact itself a biological process dependent on the activity of the sea cucumbers and other animals burrowing there which are preventing the manganese nodules sinking into the sediments which are forming faster than they are. And this, I haven't really thought this out, I only heard this last night from recent studies done from Scripps, but it does occur to me that there may be a pollution problem coming there if we kill with pollution the animals in the deep abyss, they will not be doing the earthworm style of burrowing that they have been... keeping nodules at the surface for our relatively easy access. However, my first point is that as ^{is} perfectly well known of course, the living resources of the sea which are of interest to every country and ~~are~~ have an economic significance for most countries are overwhelmingly used now for food supplies, particularly animal protein supplies. I have tried to give a perspective of their contribution on ^a ~~the~~ global basis to the food intake of human populations. It is not particularly great, 5% of total protein but it's not negligible, and that includes the vegetable protein. I think it would make it about 15% of the total animal protein consumption. But these global figures are slightly misleading, because they do not reflect the rather large discrepancies in the values of fish in different groups of countries. And ~~yet, the~~ first point that I would like to make is that with exceptions of two of the super-powers and in super-powers in fisheries we think of Japan, Iceland, Norway, not the USA and the Soviet Union, though the Soviet Union is, of course, now very important. And Peru. Well, Peru is a strange sort of super-power. It's ^a pretty unstable one and the value of its catch is relatively quite small ~~comp~~...in relation to the value of the catches of other countries, because ~~of~~ the manner in which the catch is utilized. But with the exception of these giants, the marine fish supply is considerably

more important, relatively, ~~than~~ to the developing countries than it is to the developed countries. That is, fish forms a higher proportion of their protein consumption than it does in the developed countries. On the other hand, if you just look at the absolute quantities per capita, which are given in Table II of this paper, you don't notice that. You see that the fish consumption of protein ~~per~~ per capita in developed countries is higher but this is because, of course, their total protein consumption per capita, is very much higher than the consumption in the developing countries. Another fact which is quite well-known is that a considerable part of the fish production goes to the production of fish meal and oil, which in turn goes to livestock feed. This has now reached rather more than 1/3 of the total, and continues to increase, although it has certain setbacks when some of the fisheries, particularly those which have been used for fish-meal production have collapsed, and the one that is well known is the Peruvian anchoveta fishery, the biggest fishery in the world which collapsed three to four years ago, or began its collapse then. As a result, at least in part, of over-exploitation, but the other paper, the reprint that I distributed, shows examples of other really no less spectacular collapses of fisheries in recent years, particularly when they have been exploited heavily for fish meal production. Perhaps the next biggest one is hering fishery of the North Atlantic, which has declined sharply, and possibly irreversibly. Another point I wanted to make in general, is that whereas fish production by traditional methods ~~is~~, has a low energy cost, fish production by industrial methods, even though it is a simple gathering industry is extremely high in energy costs. The energy, the fossil fuel energy, for example, for offshore trolling is very nearly as high as that for beef production under intensive beef production conditions. So it is not a cheap thing to do, energy wise. The savings that one makes by not putting any inputs of fertilizers and so on into the sea are offset by the energy required to gather the product. This, I think, is a fact about what offshore fishing, which has only recently been realized and, of course, the changes of prices of fossil energy are having a very drastic effect on the distribution of fisheries in the world, particularly through a contraction which is now going on of the distant water fisheries. That

contraction is not caused only by energy costs. I it is caused also by the fact that they have been essentially industries based on creaming a virgin resource, and when the stock has declined it becomes less and less viable to travel 5,000 miles to collect it. I wanted to make it clear, too, and I think this is very important in the context of the discussion of the law of the sea proposals, that the overfishing problems and the increasing inefficiency of fishing from the point of view of return for expenditure of energy or money is not confined to international overfishing, which we are used to historically, and competition between countries leading to a destruction of the resource; nor is it confined to the activities of the industrialized, ~~for~~ highly developed countries. And on page 2 I give an example of a fairly recent one, of what has been happening in the shrimp fishery conducted entirely by Mexican flag vessels in waters which other vessels do not go in to, showing that over a 20-year period the fish has reached a peak, but the costs of taking it have increased, I think, four or five fold and are still increasing, ~~as~~ as a result of practically unlimited competition between the fishermen of one country. A So this is very briefly the kind of global background. I then wanted to say something about the potential and here we're already on fairly unsure ground, ~~and~~ I have mentioned that the FAO assessments which were published in 1970 ~~and~~ ^{the} result of a five-year study in which many scientists participated, estimated then that the potential catch of fish could be double or perhaps three or four times the ~~present~~ catches at that time, but no more. Since then, several fisheries including the anchoveta fishery have collapsed. These don't in themselves affect our estimates very much. Those collapses are due to over-fishing and, in many cases, the stocks could be restored and there could be catches S maintained at a level not so high as they were, but fairly substantial nevertheless. But, for other reasons, we are tending to revise downward our estimates. And I think ^{now} ~~no~~ one in the business, as it were, would consider it possible to increase the catch of conventional species more than double the present amount, and probably not as much as that. And to do that requires a distribution of fishing effort such that we exploit more intensively some of the resources, but less intensively others of the resources. In fact,

it has, just as a kind of statistic to throw out, it has been calculated that if we were to take the fishing power of the world now, the existing vessels and gears in a purely theoretical situation, redistribute them optimally, we should easily take the maximum catch. That is, we have far more vessels in the world now, as a whole, than our needed to take the maximum obtainable catch of conventional species. In this situation, of course, though there is an interest in ~~the~~ development, in the simple sense of putting more boats into some areas and exploiting relatively unexploited species, the overwhelming interest now and increasingly each year is the adjustment and management of fishing on the already intensely exploited stocks, in order to maintain catches or restore them and to get them at a less cost, at a lower energy input, or a lower economic cost. It's in getting the costs down through international or even through national controls that I think we are having our poorest success. Really, the world has been extremely reluctant to face the fact that fisheries will ~~ultimately~~^{only} be maintained if we can control the internal competition to the extent of maintaining low input costs. This requires, as is obvious, a pretty substantial intervention of government or ^{of} international authority into the enterprises. However, that having been said, it's clear that those who have the capacity will turn their interest elsewhere, and the elsewhere is ^{to} what we shall call the unconventional resources. These are quite diverse, but those that are most well-known, though none of them are really well-known, are the so-called krill of the Antarctic area, which is distributed mainly along the oceanographic feature we call the Antarctic Convergence, also the same place that the great whales were caught, and the squids of the open ocean. There are squids over the continental shelves which are not yet harvested. They could perhaps yield ~~a~~^{another} rather 10-20% increase in the present total catches, but there are squids also throughout the deep ocean and ~~in surf~~, in ^{the} surface, and middle waters, which could provide a catch, in theory, at least equal to the total world catch of all fish. The krill have been variously estimated as being able to provide a catch equal to the total world catch of all fish at present, or possibly ^{even} up to 10 times as much. Some would say even higher than that. The essential problem there is the energy

again, the energy requirement, to collect and process these resources. The krill is undoubtedly the one, ~~the~~ nearest to be economically exploited. From a situation three years ago when only the Soviet Union and Japan were operating in the southern ocean on a pilot scale, right now this ~~certain~~ ^{southern} summer eight nations, eight industrialized nations, are down there carrying out experimental fishing, experimental processing, and ~~though~~ some of those nations are also marketing the products. At present, it seems that it would be economic to harvest these animals, provided they can go straight into the human diet. It is certainly not economic, nowhere near, ^{yet} to harvest them in order to make livestock feeds and get them into human nutrition indirectly, where, as I say, later in the paper, you have a 90% loss rate of protein. This means... ~~sorry~~...

NSG There might be two or three people who are not sure what the krill are, in real terms. I mean we all know ...

Holt In real terms, it's a, it looks like a shrimp, it isn't really a shrimp, but it's a small, ^{its all the same} group of crustaceans as are the shrimps and prawns, up to about four centimeters long, quite small. And it can be eaten whole, frozen, but it's the sort of thing you eat with crackers and salt. It's an alternative to peanuts at cocktail parties, in that form. So, obviously, there's not going to be a huge market for ~~them~~ ^{it}. On the other hand, the Russian scientists have converted it into a form of cheese, ~~and~~ which is more than ^{tolerable} palatable, it's good to eat. ~~And~~ They are having some problems with marketing in the Soviet Union, of receptivity of people to it, but really because they're not used to it, not because it isn't good, because it is good. But it is, would only be economic if sold at the same kind of prices as those ^{sorts of} products. And, of course, this will not in any way permit an exploitation of the krill at the level of ten or a hundred million tons a year. It requires an order of magnitude of increase of efficiency in the exploitation methods before that could be done. But that this is possible is certainly not out of the question. Certainly many ~~of the~~ countries are interested in it. And the significance of this for me, in political terms, of course, is that this one place where the nonconventional species are most highly concentrated is an area of great legal

uncertainty. The convergence itself is mostly more than 200 miles from the ~~vicinity~~^{ice age}, or from the land ~~age~~^{age}. But the krill do extend into the more southerly regions, so these resources, like the whales, are distributed in part on the high seas, in the offshore, and in part in ~~middle~~^{an} area of status that I don't know what is the 200 miles off the Antarctic continent. And I have not yet got, found a lawyer or diplomat who will really stick his neck out and tell me what he thinks is going to be the status of that area. It's certainly at present ~~a very~~ politically ~~a~~^a very sensitive question. It's perhaps not worth mentioning the other unconventional resources, I simply wanted to refer to this in the sense that although we have little opportunity for mass increases of conventional fisheries, there are theoretically opportunities for very large increases in food from the sea, but under present circumstances the energy costs of gathering them and of processing them will be rather higher than we are now prepared to tolerate, although we are on the verge of exploiting some of them. There are others that I haven't mentioned, deep water crabs, also ~~probably~~^{could} give us another 50 million tons and so on. Most of these resources have not been assessed in any ~~way~~, meaningful way. ¶ A lot has been said about the potential of the sea for food production by cultivation, and I wanted to say only that in my opinion, this has been greatly exaggerated, in global sense. Certainly there is potential along some coasts locally, but ~~there~~, it doesn't come free. There has to be food, feed for the animals that are to be reared and so on, that could be developed industry, but I cannot see that the production from marine fish culture is going to make a noticeable change in the total use of the sea, in global terms, ~~in~~ⁱⁿ the next few decades. And I wouldn't like to try to look further ahead than that. I say this because I think in considering the implications of the Law of the Sea conference we really should not be diverted too much by the very intense discussion of so-called ~~marine culture~~^{mariculture}. I think ~~it~~^{that} is not the crucial question at all, when we look at the implications, especially ~~for~~^{with} respect to the distribution of benefits between the developed ~~countries~~ and the developing world.

~~The~~, It has often been said that the developing world has been increasing its fisheries' production faster than the developed world, that is, ^{that} in some ways the developing countries are catching up. You will see this in official FAO and UN documents say ^{it} quite bluntly. And I think, I wanted to say that this is not to my mind ~~own~~ really true. The difficulty comes that we have to get rid of the catches of the super-power Peru which actually distort all the statistics of fishery growth and decline ^{of} ~~over~~ the last ten or twenty years. In fact, the developed countries have been increasing their catches about the same rate as the developed ~~ed~~ countries, holding their own, but not gaining. Like the developed countries, they have been increasing the proportion of their catch which goes to fish meal production. So if you just look at production, you see whichever ^{way} you do it, you see the developing countries and the developed countries going more or less parallel as large groups. In both cases the rate of increase of production was very much faster than their population growths, up 'tilt about ten years ago. Since then the rate of increase has declined, it has still been increasing with the exception of the big events in Peru, but has been coming down to closer to the population growth rate^s. It still it a little bit above, Fishery production is keeping up more than keeping up with population growth in the world, not quite so well ^{of course} for the developing world as for the developed world. However, this does not mean that fisheries have been keeping up in their contribution to world food supplies, because an increasing part of catch is going to livestock and only one ton in ten is produced from livestock, in the conversion from fishmeal to livestock. And in the last three or four years the rate of increase has fallen below the world population increase, and considerably below that rate in the developing countries. So the per capita effective production has been declining. To this we must add the transfer process from the developing to the developed world. You see from the tables the amount of food in human diet from the sea is vastly more in the developed than in the developing world, mainly because of the transfer of fish meal from one to the other. I just pick out one or two of the main problems that come later in the paper.

Sohn

Could you say a word about why the developing countries use much less fish meal?

Holt Why? Because, I think basically for two reasons. One is that they use it as a source of foreign exchange as Peru has, of course, from the beginning, and secondly, because it is used to produce a food which they cannot afford; the people in those countries cannot afford to buy it. The costs of production are... You don't think that is true?

Hoveyda I wanted ~~later~~ ^{later} to explain this according to ~~our~~ ^{an} experiments we conducted in my country.

Holt I'd be very interested... to hear

Hoveyda You see, it happened that in the Persian gulf, it is very economical to harvest sea food. ~~Because~~ This had not been done on very great scale for you find at the surface near the coast enough ^{sea food} fish. And we have the problem in my country ^{that} whereby people who are not used to eating ^{ing} seafood. We tried to introduce it ^{and we} spent a lot of money to have the facilities, to try to shift the population at least at some important economic level from meat to fish. And we were not able. We tried to study why. And we found that it was a long historic ^{at} habit, principally due to the fact that sea food is more difficult to keep, compared to ~~the~~ meat. And that's why ^{probably} principally in the religious circle some opposition had developed against most of the sea food available in my country. Only some species of fish are allowed to be eaten. And all of a sudden in a ~~development of my~~ program you find yourself in face of centuries ^{is} of culture, which you cannot remove ^{at once}. We thought that it was due to the fact that the country is mountainous and to bring seafood from ^{South to the center and} north to the center of the country, the seafood would be completely destroyed. And although we have put all the facilities now it's very difficult for us to ^{shift} ~~ship~~ the people's habit in regard of their food habits. This is the main reason.

Holt Professor Sohn's question I think was about the use of fish meal.

I agree with you. But I think your question was about the use of fish meal, ^{for chicken} ~~shaping~~ production. Why does this go on in countries.

Sohn ^{If Iran could} Collect more fish meal, ^{and then} feed it to beef and chicken, etc. that would increase considerably ^{its} production of meat, even if the people ~~didn't~~ ^{don't} want to eat the fish directly.

NSG I would like to comment if I may, taking the chair's privilege here. It is a matter of economics as well as habit in the part of the world I know best, ^{which would be} eastern and southeastern Asia. Poultry production is not on a commercial basis. Poultry are raised as scavengers only. That is, you find no poultry industry of the sort ~~that would~~ ^{that} even roughly approximate what you might find in Western Europe, which is not as highly developed in ^{an} engineering ~~in a managerial~~ sense as it is in the United States. A typical farmer in the central ^{Luzon} Luvian lowland in the Philippines, ^{are} where there's no prejudice against meat and on the contrary, poultry ^{are} consumed in large quantities, ^{and} would find it outrageous, indeed, also budgetarily impossible to buy feed for the chickens and turkeys and ducks that are being raised on his farm. So, you have a whole cultural sub-system underlain by economics, there's no question about it which is pre-disposed against the use of processed sea food for animal feed in most of the poor countries and I suspect that this may even be true in parts of, large parts of Africa. Mr. Palma.

Palma Yes in this same respect I would certainly agree with you. ^{If} we didn't have a larger consumption of fish meal it was because we ^{didn't} have either a large consumption of poultry or pork products. It has increased in recent years when poultry became ^a little-by-little, as a sort of industry and so ^{having} an in-product ~~of~~ fish meal. In fact, in Peru in recent years priority has been given to the market, the internal market of fish meal with respect to the external market. But that corresponds to a real need to ^{an} increasing a need for the consumption of the population, ^{which didn't exist} before that. ^{Poultry} ~~it~~ was an exotic food, a few years as not to require really the ^{is what} ? periodic consumption of the fish meal and ~~that was~~ ^{happening} ~~that was~~ ^{foreign} ~~falling~~ currency ~~and~~ needs was a very important one, too. But the other factor existed before.

^{to Peru to a certain extent}

NSG Thank you Mr. Palma... Ambassador Engo... I just want to announce names so on the tape we have people identified. Thank you.

Engo I think side-by-side with this we must recognize, too, that many of our young countries are studying and researching into producing chicken feed, for instance poultry feed, from less expensive sources. In my country, for instance, we never had ~~an~~ industrial poultry as you have in the United States or elsewhere. ~~But~~ We did have government centers that encouraged poultry production. As mentioned by Mr. Quisling, we, too have the type of arrangement where the family has chickens just running around feeding on worms and whatever they can find, and they were actually reproducing. The only dangers with them ~~were~~ weren't so much the disease so much as the hawks as picked up the little ones. But you have to examine ^{whether} ~~and the fact that~~ ^{in the past} a need exists ^{it did not} for expansion in that direction ~~and the fact that~~ it doesn't exist mainly because of the alternatives they had to chicken meat, for instance. They had wild game, for instance, porcupines and several ^{even} ~~little~~ wild birds, too, which were more delicious than the home one. So the question of fish meal has never presented itself as an attractive proposition, either for government to produce it or to import it. I can just mention some psychological question, I tried to produce the poultry myself when I got home. ^{It's a good} ~~the~~ ^{pastime} ~~time~~. But when I was studying the possibility of importing things like this, ^{we heard rumors that} ~~I had to realize was things like this~~ ^{When you use fish} meal, chicken begins to smell fish. And that kind of propaganda, ^{I don't know whether it is} ~~propaganda~~, or ~~is it~~ reality, did exist and I took my hands off it ^{immediately} but in my country they are producing chicken feed ^{now} from other sources. We've got our own corn and beans and various other things with important vitamins added to them. So this ^{is a sort of} ~~is a sort of~~ explain why you wouldn't have that type of industry And of course ~~the~~ setting up an industry like that is a very expensive thing, and developing countries cannot always afford.

Holt Let's make it clear. I'm by no means an advocate of using fish as fish meal. I ^{like} ~~may have~~ to use it as fish.

NSG That's exactly the point I did not want us to lose here. You made it very clear in your paper that the conversion rate of, if one speaks of protein, from fish meal to poultry products

is, ~~well~~ essentially wasteful. What is it ten-to-one with one of the figures you employed, so that if one wants to maximize the food value of fish, fish meal is not the way to go. ~~And~~ only the rich can afford it. Is that right?

Holt It isn't, in terms of ~~conversion in~~ comparisons with other conversions we make, it is very efficient, but all the conversions are inefficient as is amply shown by the great discussion in recent years about grain consumption for cattle feed. Conversions ~~are~~ there is much less ^{and} ~~that~~ But ^{efficient of course} against this we have the problem of moving the fish catches to ^{the} centers of population in some form or other which requires ^{it} doesn't require drying, transport as a powder and feeding ^{it} back into hens. It's got to be moved in some other way ^{through} to freezing and so on. So you can't really escape ^a the reconversion costs of some kind.

Palma ^{once the} And in this same line I should point out that ~~at the~~ beginning of the fish meal industry in Peru, perhaps not with the necessary stress but nevertheless ~~was made~~ ^{was made} a very important effort to have the necessary research for utilizing directly the fish meal as a human consumption product. This is a very heavy and extremely complex ^{technical} task; and quite a great deal of experimentation has been done in Peru, ^{although} the results are not yet, as far as I know, as promising as we would like, but the ultimate goal of this fishing was a direct human consumption. That was really very, very clear from the beginning; it wasn't simply a question of having foreign currencies which was very good in a certain time, but to utilize the product for direct human consumption, instead of going through poultry, or some other things. And that makes particularly distressing the actual situation, ~~whereas~~ ^{As} Dr. Holt said there was a collapse in the fish industry, and this is correct. But for completing the picture I would say that this collapse was a very sudden one. Peru has been fishing perhaps 10 million tons a year

Palma

Weda

[Sibyl]

for several years and then, from one day to another almost it entirely disappeared. Then it came again, gone again, and so on; and we are facing this very difficult situation where we don't know still what the level of damage is to the yields of anchovy and this is, of course, a very great concern for everybody in Peru, and in many other parts, too. And this was important also, due, as Dr. Holt said, that even in terms of tonnage, the Peruvian cut was a very important one for not being directed/^{to human}consumption the economic ~~result~~ ^{result} to this catch was, in fact, much less than that of other countries of Japan, South Africa, Portugal, even some countries in Europe, perhaps the Skandinavian ~~countries~~ ^{and} that sort of things. So it wasn't as economically productive as other areas in the world.

NSG: Thank you very much, Mr. Palma. Yes, Ambassador Hoveyda.

HOVEYDA: I just wanted to make a few remarks about the paper of Dr. Holt in the framework of the SNT. I think that this is our purpose, SNT, ^{and} a new international economic order.

First of all, I think that he has condensed so many problems so ably in a few pages that I spent half an hour this morning and I learned a lot about the problems. I think that in the framework of the SNT and the new international economic order I would like to make two remarks:

First of all, that it is obvious from his paper and other seminars in which I participated that our scientific knowledge of the oceans is very small compared to our ignorance. The conclusion, in my opinion, regarding the conference on the law of the sea and whatever else we are

doing in the framework of the United Nations and other organizations, the conclusion is that we should be very cautious in elaborating decisions which have a bearing on the future. We should be very cautious; we should leave it more or less open and flexible for changes. And also, because of the same remark I made, we should build up co-operation in the field of scientific research and ~~for~~ of exchange of information. This is very, very important both for developed and developing countries; and on this side, I think that ^{the} SNT is not really very clear, and some dispositions would be introduced in it to make ~~this side~~, -- this aspect of the problem, stronger.

And the second remark I wanted to make in the same framework is that we cannot really single out the problem of food resources of the oceans from other resources. These are inter-linked and should be considered somehow together. The other possible resources of the seabed, like minerals and fuel and what-not are as important in human life as food. We are not in the earlier stage of man to think only about food; the needs have developed in many directions and we have to take them into account.

In the paper I submitted, on page 12, Section 12, about resource sharing, I just tackled very rapidly with this problem, so as it is in the paper I am not going to take the time here to repeat what I have there. ~~And now~~ ^{influence} these remarks that I have put in my paper concern the ~~interest~~ of the SNT on economic exploitation of the ocean resources.

I would like also to make now another remark about

collapses or other influences of our activities in the oceans which are harmful, not only to ourselves but maybe to others and which need cooperation; and we cannot wait until a treaty is drawn by the conference, ~~to~~. . we cannot wait until such a time to take immediate measures. I would give as an example ~~the~~ a problem which might appear as a luxury but which is a source of revenue for my country and for our neighbor, the Soviet Union-- caviar. Over the two past decades, both the Soviet Union and ourselves remarked that the caviar production was diminishing. ~~And this was after when~~ **I** it was easy because the Caspian Sea is just between Iran and the Soviet Union, so it's easy to establish ^{co-}operation; it is easier than if we were, let's say, ten or twenty countries. So we studied in common the problem and we found out that one reason was over-exploitation in the fisheries; and not due to the fact that the governments were over-exploiting, but there were a lot of individuals who would go on fishing; ~~is~~ small enterprises, non-licensed enterprises, **because** in both the Soviet Union and in Iran the fisheries are planned in the framework of the five-year plan; both in the Soviet Union and in Iran. But this over-fishing which we began to combat in cooperation by trying to stop all small, private enterprises who would bring caviar on the black market, ^{That} ~~was~~ not the main cause. The main cause was pollution, and the pollution was coming through the Volga because of the development of industry along the Volga in the Soviet Union. And on this also we were able to establish cooperation, and

it was four years ago I think (if I'm not mistaken) that we signed a common agreement on the pollution and the production and the fisheries in the Caspian Sea. I just mentioned this example in order to show that if the process of negotiatinn concerning the treaty on the law of the sea is going to be long, we have in the framework of the conference to adopt resolutions or whatever else in order to promote this cooperation among states, both regionally and internationally, because this cannot wait. We have to do it now; so maybe, we should somewhere in our conclusions, mention the necessity of having such a resolution, a recommendation be adopted by the conference marginally to its negotiations on a text. These were the remarks I wanted just to throw in the ring at the present time.

NSG: Thank you, Ambassador Hoveyda. In response to this, Sidney, do you want to respond?

HOLT: Not to that particular. . . of course, the Caspian problem is a very special one indeed, and relatively simple; it illustrates extremely well the conflict of interests between fisheries and other uses of, in this case, ^{the} ~~a~~ water system rather than of the sea *itself*.

I think I'd like to say something, though, about the.... my view of the entire Single Negotiating Text with respect to fisheries, because, and without appearing to be simply destructively critical, I would say that it is practically 100 per cent unhelpful in relation to the real problems. And I think ~~this~~. . there are two reasons for this: notwithstanding some lip service and some word service, there is

a complete failure, I think, to recognize the reality of the mobility of living resources. There has been an attempt to distinguish between migratory species and less migratory species and this is a step; but ^dis very far from the whole story. I think it is not realized how much of the resources are shared between economic zones, future economic zones even, I should say, for example, the biggest fishery, ~~Guad~~ ^{what was} ~~_____~~, the Peruvian anchoveta ^e ~~_____~~ is still shared by Chile, although Chile has a small share because of the distribution of the anchoveta; and what Peru does or does not do with the anchoveta resource affects immediately what happens to the Chilean fishery. Now, that is a case with rather little interaction but nearly all other resources are, in fact, shared. Now, this is sometimes said although it is often thought that this is because you have to take account of the movement of fish through migration along coasts, and so on; and in here I have tried to show that there are many other factors than simply the movement of fish along the coasts-- that even, relatively sedentary fish over the periods of decades spread into certain areas so ^{if} that over ten years you systematically deplete one area, you will always be sucking fish into that vacuum that you have created, in most cases ^{of} with the speed that we can't measure, but theoretically could, if we did the research.

There are, of course, much more subtle effects; there is a very clear one in the North Sea, for example, where

much the most important effect on the seabed is certainly not oil drilling, it is gravel extraction for concrete; and the critical thing there is that gravel comes exactly from areas where fish breed, so the British extraction of gravel from the North Sea is destroying the recruitment into the Dutch and Danish fisheries.

Now, the point I wanted to make here is, and by taking that particular example, is that there is nowhere in the world where there has been more international scientific collaboration and research, even so-called management bodies, it has done nothing to stop the herring disappearing from the North Sea, the world's second biggest fishery. The point is that collaboration - scientific collaboration is important, certainly is essential, but it is not sufficient, and alone has done nothing. ^{The} ~~Its~~ basic thing is the decision as to who takes what on a joint basis. And this is where I feel that the Single Negotiating Text and all the discussion in the law of the sea conference so far has been away from the reality that over and over again one sees as if there is an allowable catch to be determined by a coastal state which has some meaning, and which is any way, independent of what the adjoining states do, or what is done on the high seas off shore. I think there's no real grasp of this.

~~Now,~~ ^{The} The second point is that the conference has taken over almost without change the objectives in conservation and management terms that were written into the 1958 conventions.

And since that ^{time} we have seen first, in the application of those principles -- not through the fifty-eight conventions -- because they have not really been applied, but embodied in regional management bodies, the almost complete failure of those definitions of objective. And secondly, the experience, the knowledge that we now have of the interactions in the sea generally, the ecology of the marine environment are such as to make those formulations whether one calls them allowable catch, maximum sustainable yield, optimum yield, completely irrelevant to the discussion of management. So this is why I say that the text is unhelpful and perhaps for me, worse than unhelpful -- misleading; because we have something that looks as if it could be valuable but is, in fact, not.

These are the two points really that I wanted to make.

NSG: Sidney, a very important point of clarification on your part: when you argue, as you do, in the background paper that --and have just stated -- that these concepts such as maximum sustainable yield are irrelevant, it is not entirely clear as to your basic argument. I am not disputing the statement, but it is a fundamental statement obviously, it is assertion of fundamental importance. I simply ask you if you would clarify that crucial element in your general argument. Would you?

HOLT: Yes. There are a whole series of objections to it and of disabilities. One is that we don't know how to measure it even if it exists; we are trying -- an enormous amount

of effort has been put into an attempt to estimate a maximum sustainable yield; and I know of no fishery where this has been estimated and then implemented and shown the estimate to be true. This is perhaps the starting point. One can have a long scientific debate about this, but I would say that this is a consensus now of a considerable number of the scientists involved -- that is, a recognition of, as someone earlier mentioned, of our lack of knowledge, inability still to make viable models of even parts of marine ecosystems. Scientists involved in fishery management bodies are exceedingly reluctant to admit this for a very good reason, that they have seen that wherever they, as advisors to bodies, have said we are really not sure, they have seen that decisions have been taken on an exceedingly short term basis always; so they have over-emphasized for twenty years their security in what they are saying. But the insecurity is evident again from Peru or from the herring where we thought we had fairly good estimates, and it is quite clear that they were not as good as we thought they were. We were playing again and again, especially with these species with ^{very} large catches a game of brinkmanship. Perhaps the Peru anchoveta would have been okay if the environment had stayed nicely constant; but we played so near to the brink of collapse of that resource, it only required two successive years instead of just one isolated year of say, bad environment, to bring it right down. And this has happened now in about eight

cases of fisheries in the world.

The second problem with the maximum sustainable yield ~~is the~~ . . . comes from the interrelations between species. We can see no way in which we can exploit a number of interrelated species and get a meaningful single figure, which is the optimum or maximum yield from it. You just can't maximize several interrelated variables at once in mathematical terms. And so the maximum sustainable yield idea is simplistic.

A second feature is. . . a third point I have mentioned is that it depends on assumptions of stability of the environment. We have a beautiful case of the ones I have been working on, it's a kind of historical. . . it's archaeology now, I suppose, but looking at the situation of the way the management of whales is being carried out, I mention whaling, incidentally -- many people think that this is a relatively trivial thing, it now is, but it once was 12 or 15% of the total world catch of all marine products, not so very long ago. It was not a trivial activity in terms of food supply. Anyway, all the assumptions have been, in applying maximum sustainable yield theory that there was a stability in the environment until man came along and started harvesting intensively; ~~that~~ ~~is to say~~, you have a steady state which is then changed hopefully to another steady state. We now see very clearly long-term, medium-term climatic changes which tell us that those resources were not in stable state even before we started exploiting them, and we have to take these into

account. If you have transient states and not steady states, again, in mathematical terms, you cannot define a maximum; and yet this is the reality of the marine resources.

Another is the irreversibility of many processes. Earlier fishery management, and certainly the management experience off which the 1958 definitions were based was of reversible situations in certain kinds of fisheries. In the early years after the second world war the only over-fished resources were the bottom-living fish of the North Atlantic. Our experience there was that the situation was reversible, we knew this from the effects of the war-time cessation of fishing and the recovery of stocks. All our experience since then is that intensely exploited resources the changes are partially, at least irreversible. Furthermore, we don't know how to predict whether they are going to be reversible or not.

When the California sardine disappeared it wasn't replaced by the California sardine; it was replaced by something else, if at all. And now, in these twenty years of experience of many ^{other} over-fished resources we see that we are not dealing with. . . in the general case, with reversible effects. And this again, has an implication to the maximum sustainable yield theory. This very crudely. . . .

NSG: Thank you very much. Let me remind us that we ought to be breaking for coffee now, and for a stretch, at least. The subject is fascinating. Let me also remind us, because I was remiss in the beginning in not doing it before, that

We are really concerned ^{with} ~~in~~ Part 1, Section 2 of our basic document, that which deals with institutional requirements of the international management of fisheries -- that's on pages 112 following, so that we ~~will~~ ^{are} still be working with the document, although we shifted our attention -- our focus of attention on Sidney Holt's presentation. I suppose we ought to be asking now, Sidney, what the implications are for this section -- pages 112 following, in our document, of what you have presented to us; but I don't know whether we should do that at this moment before a break, or whether we should do it after a break, and I see guidance from the group.

^{Sohn}
~~HOVEYDA:~~ Time for a break.

NSG: Time for a break. Is that all right? We must return then to Part 1, Section 1.

EMB: We can do that then after lunch, give main attention to ^{IMCO} that after lunch and then try to get/in after that, if we still have time today.

NSG: All right; so that we can continue at least for a while after the break on this subject, Part 1 Section 2, is that agreed?

EMB: If we can finish it quicker, that's fine.

NSG: Then we can move on. Why don't we do that. Let me remark that we welcome Ambassador Engo, who already has spoken, and we also welcome Professor William Murdoch at the far end of the table who is professor of Biological Sciences at the University of California in Santa Barbara, who recently led a conference here on food and population, and

perhaps Bill, you might have something to say after the break; or feel free to participate certainly. We'll break for 15 minutes -- well, ten minutes.

* * * * *

NSG: The floor, of course, is open. We should bear in mind that there are recommendations in our working document here concerning the administrative, institutional end of the problem; and of course, there are some specific recommendations about COFI, do you pronounce COFI or just C O F I?

HOLT: We call it COFI, because otherwise we get confused with another department of FAO.

NSG: I see; well then, COFI is a code name for the agency ~~responsible for. . . I mean it's~~ designated to be responsible for certain functions described in the report. But, in any case, the issues ^{is} now on the table . . . we want to continue the stimulating discussion led by Dr. Holt.

HOLT: I'll just take five minutes to put one or two points on the table. The first is the Committee on Fisheries of FAO is an intergovernmental body and it was set up, I think, ten years ago by FAO, with the intention of making FAO a leading organization in the field of fisheries at a time when international conflict was multiplying and at the same time large development programs were being funded by the UN development program. It was set up with very great caution and, in fact, with very great difficulty because the FAO constitution is entirely oriented to the

land; so, for example, it has been quite impossible for the whole history of FAO to establish proper regional organizations related to sea regions; even attempts to change the FAO constitution have failed in this respect. COFI was set up as a committee of selected countries; it has recently been expanded to include potentially any country member of FAO. The structure of FAO is such -- rather or/the position of COFI in the hierarchy, it reports to the FAO council which is the executive for the FAO conference. ~~the~~ structure is such that COFI has practically no autonomy even at that level; for example, Portugal wanted to join last year, it will take them two years or three to get through the simple process of being accepted as a member of the Committee on Fisheries.

LaQUE: Sidney, can you tell me what COFI stands for:

HOLT: Committee on Fisheries.

SOWN

~~A FISH COMMITTEE BEING MADE IN THE BACKGROUND WHICH CAUSED SOME CHUCKLES~~
Committee on Fisheries International

A second problem is that the Soviet Union remains a non-member of FAO. Although the Ministry of Fisheries of the Soviet Union have again and again expressed its interest in participating in the fisheries activities of FAO, they do so as second-class citizens and there seems to be constitutionally no way out of this, except for the Soviet Union to join FAO, ~~and~~ ^{that} we keep hearing is going to happen and it doesn't happen.

But the third, perhaps far the more important question is that all fishery management at present is carried out on a

regional basis where it is carried out through treaty organizations that are not associated in any way with the United Nations system.

Several of these, as a matter of interest, had in their conventions that they could decide whether to, in some way, associate with the United Nations system at the time of their first meeting after the treaty~~s~~ came into effect. In no case did they decide to so associate. So COFI has for ten years pussy-footed among. . . in this system of attempting to collaborate, attempting to act as a leading organ with global interests, with very, very little effective relationship with the existing regional organizations.

There is a myth -- it certainly came up in the 1958 and I think has come up several times in discussions in the current law of the sea conferences that somehow or other the seas are rather well covered by regional bodies looking after fisheries. If you draw a map of the world with the boundaries of various regional organizations on them, it seems that the world is pretty well covered except for this great lacuna in the southern ocean that I mentioned before, and which concerns me very much. However, when you look closely you see that there are approaches to management bodies of universal coverage-- comprehensive powers as near as any international organization now gets, only in the North Atlantic. The North Pacific and other places are a mess; there are commissions, they are partial ones. For example,

the North Pacific treaty was signed by Japan under duress in the years after the war; it has expired and no one has been able to renegotiate it now, I think for seven or eight years. The Soviet Union is precluded from membership -- that's just one. And when you go around most of these regional management bodies are very biased or ineffective, I think, in their organization. So I say that because I think we should not go with the impression that just because the map is well-covered if you draw boundaries around, the world is already well covered with regional organizations.

Many of these large areas are covered by organizations under FAO and what has happened is that over the years regional bodies have been set up by FAO, they are not under the Committee on Fisheries, however, ^They, too, are set under separate agreements. And by one device or another to try to get a regional agreement within the constitution of FAO which, in fact, precludes regional agreements on an ocean basis; but none of those bodies have any management power whatsoever. A few of them can make rather weak recommendations to their governments that they should act jointly in making consistent. . . . as it happened in the Mediterranean . . . consistent regulations for their fisheries. But really, as management bodies they are practically ^cnon-existent. And this is no secret; this is well recognized by FAO, but was the best that could be done in the circumstances.

So the crucial questions, I think, with regard to

structure are: you have a body, Committee on Fisheries, with perhaps a potential but requiring drastic changes to make it even as effective in its field as some other of the UN bodies are effective in theirs. The Intergovernmental Oceanographic Commission under UNESCO, for example, is the result of a great deal of maneuvering and pressures in the last five years has become much more responsive to world needs with respect to marine research, for example. Previously, it was a club of the industrial powers dominated entirely by the Soviet Union, the United States and the United Kingdom, I would say. Now, it has a majority of developing countries as members although they still lack very much facilities to participate fully in it. But structurally, it is open to all states although it's within UNESCO, it serves the UN system as a whole, and so on.

IMCO we shall hear more about from Tom Busha, but basically, the Committee on Fisheries, which is of interest perhaps to more countries, because fisheries are of interest to more countries than any other use of the sea; and where regulation is perhaps . . . exists on paper but is a mess in most places, the Committee on Fisheries is, in my opinion, the weakest of the components of the UN system with regard to the management of ocean space.

We have that problem with COFI itself and then what do we do about the existing regional bodies, how will they work, how will they be replaced or made responsive to world needs? How do we progress from, say, the international whaling

commission being a body of whaling countries with their special interest with a few others added on - ^{ex-}~~the~~ whaling countries, or present purchasers of whale oil and meat and make this responsive to a world situation, to the ideas of the new economic order, and so on. Whaling is a particular example, but one ~~could go on and~~ say this of most of the other regional bodies, I think.

NSG:

Sidney, thank you very much; that's most helpful. Mr. Skoglund.

SKOGLUND:

Thank you. I would also like to stress the point that the Soviet Union and China are left outside, ~~from a~~ and that must be very important for the future to get them in the picture/some way. We had ~~an~~ food conference, and after the world food conference we established the world food council; now we are establishing an agriculture development fund with. I think, the aim is one billion dollars, to start with. And I just want to ask if any discussions have taken place between FAO and the Secretariat for the ^{agriculture, for the} world food council with ~~the~~ ? ^{and so on} for it seems that fisheries food also could be included in that institutional framework in some way.

HOLT:

I should say that there has been practically ^Cno impact on the fisheries activities of the World Food Conference discussions or decisions; except in the sense of agricultural research funds, and so on. But, as I have tried to say, although we need to know more about the sea in the context of the main systems in the context of the law of the sea, jurisdiction

and objectives of management are what are crucial, not the investments in research.

Perhaps I should say that at least some people are not unaware ^{at last} of the deficiencies of the present arrangements; and, in fact, the Committee on Fisheries of FAO is itself trying to make a critical reappraisal of the future of the fishery management in relation to the law of the sea discussions. In fact, next month in Lisbon there is a special intergovernmental meeting to consider just this; and, as a matter of fact, the chairman of the conference, the director-general of fisheries in Portugal has tabled the paper that we are discussing today as one of the basic working papers for that discussion. There is, however, a distinct lack of communication evident between the delegations, the participants in the law of the sea discussions and the governmental representatives that come to the Committee on Fisheries; and I think one of the really important things to do is to get some feed between these two arms of government. It would be very good if fisheries people coming to Lisbon were at least briefed on the general political problems that are being discussed in the law of the sea conference. So far we haven't seen this happen very much.

NSG: Yes, Mr. Ambassador.

HOVEYDA: The remarks of Mr. Holt are ~~driven at~~ ^{drawing} . . . to the problem of institutions and restructurattinn of the United Nations system and whatever other international organizations exist. And I wonder if we should discuss them only in relation to

fisheries or leave that aspect for the last point on our agenda; because this is certainly both restructuration of the United Nations and the institutinnal concepts which would come out of the law of the sea.

EMB:

Well, if I may perhaps say something to that, yes, it's the pleasure of the group to postpone the institutional discussion altogether till tomorrow, that can well be done. The study that we submitted ^{as background} ~~is back on~~ paper divides ^{it} up a little differently. That is, I mean, when we speak of each use in the second part of the study we make concrete suggestions for the improvement of the management of these uses. And then I thought that might be the basis for a general discussion of the interactions tomorrow. I don't know how much time we want to spend on the particular suggestions that we made with regard to fisheries. If I may just take another minute or two since I have the floor, it seems to me that Mr. Holt's paper and his remarks as well as Part 2 of the Single Negotiating Text make the need for international management measures in fisheries absolutely clear.

There is perhaps another thing that is clear and that is the law of the sea conference, such as it is structured and such as it is in reality, and such we have to take it, cannot possibly do that job this year or next year. However, I think that it has already set a precedent in giving directions and instructions to the agencies. The precedent comes from Part 4 from the special procedures -- Part 4

instructs the agencies to assume new functions and to set up new structures. So, if that can be done with regard to dispute settlement, which is a new function for these agencies, it can also be done in other ways. And I think that it might be considered the responsibility of the law of the sea conference to ^{go} that way; and at least to initiate this process by making. . . by giving the mandate to these organizations to proceed to restructuring ~~in~~ in a certain direction, while then, on the other hand, the conference in a future stage might take care of the integrative part. This was the thrust of our study.

NSG: Ambassador Hoveyda.

HOVEYDA: I have no problems personally in coming along with the conclusions on page 119 about the role of COFI and the possibilities of its ^{? finding(?) funding?} planning its functions, provided that COFI would represent all the interested countries, otherwise if some countries are left out it wouldn't be able to perform these things. But nevertheless, I have to ~~ask~~ ^{add} one proviso, and that is that this should be provisional because not only in the law of the sea we don't know where we are going to come out, but also there is a ^{process} ~~purpose~~ of restructuration of the whole ~~of the~~ system of the United States which is being. . . I agree with you, Elisabeth, that it is very important in the meantime to have some sort of authority who would coordinate all these things and ^{the best} ~~this~~ appears to me to be COFI, so I go along with this, provided that this is a provisional for an interim decision of the conference, ~~and~~ that should be revised after we see how the

EMB:

[EMB: Right]

conference ^{would} come out with ~~the~~ decisions, and how the United Nations is going to be restructured.

NSG: I think that's a very important consideration. Elisabeth. . .

EMB: Yes, I completely agree with that too, of course. In a way, however, one might even say that since in the oceans we are now farther ahead in this process and the restructuring is even more urgent than it ~~has~~ ^{is elsewhere perhaps, but} ~~that~~ in a way what we might be doing in the oceans is to create a kind of a model, to create a kind of a precedent here, which might have an influence on the whole restructuring ~~posit~~ ^{process} in a way, because we happen to be farther ahead. We happen to be deeper in the process already. But the essential point in this question seems to me to be what Mr. Holt has indicated a minute ago, that so far there is no link between these things in the law of the sea conference and that it is essential for the new international economic order that these links be somehow established, even if by way of a resolution, ~~of~~ an expression of intention, or name it what you will; but it must be established.

NSG: Mr. Sohn.

SOHN: There are several separate issues on the table. The first one that was raised was the membership of the group, as Ambassador Hoveyda has said, it is very important to make it ~~acceptable~~ ^{accessible} to everybody concerned; and I would suggest that we have a very good precedent in what was done in IMCO, where we used to have a very ~~specte~~ ^{re-restrictive} Maritime Safety Committee of just a few states, of only sixteen originally, and a year ago we made a radical change, open ^{ed} that committee

to everybody; and it required an amendment to the constitution but it was done; or, I mean, this amendment is now ~~being~~ in process of ratification. So it seems that the first step might be to try to push through amendments to the FAO constitution that would permit the ~~permissible~~ ^{permissible}. I don't think that there is any really basic trouble except very conservative interpretation~~s~~ in the past~~s~~ of the constitution,

NSG: Mrs. Borgese, do you want to interrupt Professor Sohn?

EMB: I just want to confirm what he said. We have this in our recommendation (3) (a) *here*.

SOHN: Very good. The second question is relationship to existing regional organizations, especially those that have not been established under FAO; and I think Dr. Holt has pointed out there are two categories: some that have been relatively successful, like the two in the North Atlantic and those, you might say ~~could~~ ^{should} be simply linked somehow with a supervisory body; and ~~it~~ ^{it} seems to me that the first step to do it is to require every ~~original~~ ^{regional} organization to submit a report to COFI, which would be discussed at a special high level meeting once a year so those things would ~~circulate~~ ^{percolate} through the government back to the regional organizations that already exist.

On the other hand, those organizations that prove either inefficient or are, in fact, in the state of collapse, I think you have to start from scratch and say we ought to establish new regional bodies there and somehow put them from the ~~very~~ very beginning more under the structure of FAO. And here it

seems to me again you need something drastic about the constitution of ^{the}FAO, because we have seen that, as Dr. Holt has mentioned, even those organizations established under FAO have very tenuous links really to the central organization. Therefore, I think, again, my suggestion would be that the matter would again be put on the agenda of the next FAO conference to change those provisions; and it seems to me it would be very appropriate for the law of the sea conference to adopt a recommendation to FAO that those two constitutional changes that we mentioned should be adopted by FAO as soon as possible.

NSG: So recorded. Tom Busha.

BUSHA: ^{Can I just}
~~Just to~~ add something to Professor Sohn's comment about 3(a) on p. 119, that is the universalization of membership of COFI. I am very grateful to Professor Sohn for pointing out the IMCO precedent, so to speak, and I just wanted to add that, although it may not be appropriate or apposite to the FAO situation, it is, in the case of the MEPC, Marine Environment Protection Committee, not only a question of membership but also of opening up to states, parties to conventions which are concluded under the auspices of IMCO. It might be a precedent indeed for the situation that involves the U.S.S.R. ^{that} ~~as~~ Dr. Holt has pointed out; namely, a non-member of the organization, in the case of IMCO, can take part in discussions ^{albeit} without vote in the MEPC in discussions, that is, which concern conventions that . . . environmental conventions brought into being by the diplomatic conference, as convened by IMCO. Of course, in some organizations, the

creation of conventions is limited within the membership framework itself, as it sometimes is in UNESCO, for example. But it's a precedent which might be followed and it might be useful; in which case it would not only be the universalization of membership in the larger sense, but also participation. Thank you.

NSG:

Thank you. May I ask if we could just check off before we go on, perhaps a little more clearly, the functions that a hypothetical body of the COFI sort in a transmuted form might perform. Some of this is embedded in the document. Sidney, you didn't refer to all these things systematically and it would help me a lot in just thinking about it. Let me try a few thoughts and then see , . to start this off.

Although it's not mentioned, I assume that a body that would perform information storage and retrieval functions would be useful. That wasn't mentioned, ~~but that is~~ . . . what do we know?

Second, a body that would either engage in certain kind of fisheries oriented research or, at least the monitoring of fisheries oriented research ~~on~~ a systematic basis, that would be related to the first function.

A third function which is referred to in different ways would be the . . perhaps, let's ^{start out} ~~say~~ with the monitoring of the activities of the regional fisheries bodies within the context of certain standards or criteria that the conference might propose about the desiderata relating to fisheries -- living ocean resources.

Now, I had also the word here the "coordination" of

these activities, but I'm not sure that that wouldn't be going too far. That is implied, I think, in some of the remarks made; so there is monitoring of activities; evaluation of activities of regional fisheries bodies within this context; and possibly their coordination. There is a triad of functions.

Let me go on: responsibility for fisheries conservation in areas beyond national jurisdiction -- that is specifically referred to, I think on p. 118 - which might include licensing or what-have-you. Then finally -- just in my list -- the function of arbitrating or resolving disputes not necessarily associated with the same institutional entity, possibly dealing with some other that might have a more general arbitration function.

Were
~~Are~~ these pretty well covered? It would be very helpful in thinking through the implications of this if the functional attributes of an appropriate institution or institutions were specified in this way. Are there other things that we left out?

HOLT: There is one that you haven't mentioned which is on p. 119 (3) (d) although I would just *perhaps* like to ask one of the authors of this who is here whether that is intended to mean an international enterprise for the exploitation of the living resources in a managed system; and if so, that was additional to the. . .

EMB

NSG:

I left that out because I wasn't sure what it meant.

EMB:

It meant to use the seabed authority as a precedent and create an enterprise in which developing nations could

participate directly in the exploitation of these particular, ^{of} these non-conventional resources for which individually ~~the~~ developing nations do not have the technologies. I mean, the analogy is very exact.

~~SEVERAL PEOPLE SPEAKING AT THE SAME TIME~~

SOKN
HOVEYDA?

The wrong word is management, it should be exploitation.

EMB:
HOLT
NSG:

Exploitation it should be.

Managed exploitation

Yes, Ambassador Hoveyda.

EMB: YES, managed exploitation.

HOVEYDA:

This section needs -- if you allow me to say so -- some sort of rewriting; because under the restructuring we have things which are only of organization type and ~~since~~ ^{things} which are functional type. We should separate both to make it clearer and more easy for anybody who would look at the recommendatinnns. Thank you.

NSG:

Thank you. Other comments?

ENGO:

Let me just ask you what you have in mind when you talk about establishing the enterprise, Under what system? You see this coming under the seabed authority. I don't think that the seabed authority at the moment is going to. . .

EMB:

No, it should come under COFI.

ENGO:

Oh, I see; well that's different

EMB:

I think that in restructuring COFI one should now look forward . . . one might, in some ways, emulate the example given by the seabed authority; because the seabed authority is the most modern, ^{the} and most responsive to the needs of developing nations, the most responsive to the needs of the new international economic order. Of course, the problems are different and one cannot duplicate the same strudure,

there will be big differences; also we want to build on what we have and COFI is a different basis to start from. But in some ways the needs for international direct exploitation of resources of the international area exist in fisheries the same way they exist in . . . for nodule mining.

ENGO:

I ~~feel~~^{fear} that. . . of course, maybe I am completely misunderstanding the motive here. I think in any conference there has been great resistance from most sides to the idea that the area beyond the national jurisdiction of states, ~~are~~ the water column over the seabed and ocean floor is ~~not~~^{not} still regarded entirely as the common heritage of mankind. The argument is that the declaration talked more about the seabed, the ocean floor, etc. than the resources therein: ^{the area and} the resources being the common heritage of mankind but there is no mention about the resources of the water column which basically is fishery. I don't know how you are going to begin to set the pace for a debate on this to resolve the question at the moment whether or not you consider fish in the area beyond national declared economic zones to be the common heritage of ~~humankind~~^{all mankind}.

In the same sense as you think about the resources of this ~~ocean~~^{of the} seabed. I see a problem, a basic problem there, and I don't see any of the states involved in fishery at the moment easily accepting that there should be an international enterprise as such to exploit those ~~given~~^{living} resources on behalf of mankind, probably to the exclusion of the states, the long-distance fishermen who are engaged

in it at the moment. ^{Maybe you can throw some light on that} Well, ~~these were just some items...~~

EMB: Indeed, we are quite aware of the fact that this is a departure from the established order; but since we want to build a new one we are not particularly reluctant to dare to propose this deviation. There are a number of people in the law of the sea conference who have, indeed, advocated an extension of the concept of common heritage to the living resources.

ENGO: That's the point I am trying to get.

EMB: Our friends from Tanzania, for instance, and others as well. Yes, that would be the underlying assumption, that that somehow formally or informally, be accepted. But the more direct political context, ^{here} of course, again is the building of the new international economic order; because if these new unconventional resources of the international area ~~order~~ are left to be exploited by the few nations who have the technology ^s to do so, well then there is no new international economic order.

ENGO: But I'll just mention this that as far as Africa. . you mentioned Tanzania. This is an African position, the heads of states declared that there shall be a territorial sea and there shall be an economic zone the outer limit of which would be 200 miles from the baseline; everything else beyond that is international and the subject matter of the common heritage concept. I just recognized the fact that in spite of a viewpoint which the Africans are going to insist upon, there is ^{nothing,} ~~no~~ text at the moment generally agreed which

recognized that the resources of the water column are, in fact, the common heritage. So basically, we are presuming that your recommendations here are to the effect that it ought to be, and on the basis of that then you make your projections. That's clear.

NSG: I have Professor Sohn and Mr. LaQue.

SOHN: I agree with Ambassador Engo that there is strong resistance to declaring the ~~resources beyond~~ . the fishing resources and other resources of the ocean beyond national jurisdiction as a common heritage. And I think a proposal made so broadly in this draft might run into very rough waters. On the other hand, isn't there perhaps something in between? Namely, what you are after is to increase the ability of the developing countries to fish in the broad oceans. That could be done by establishing, say, regional fishing enterprises; instead of making one global to which everybody belongs you could have regional fishing enterprises -- like we had for instance the la flota gran Columbiana -- with respect to maritime matters at some point; and that fishing enterprise would get together a group of states who would be willing to finance it, to regulate it. They might be able to get, for instance, a loan from the International Bank much easier if they go to the bank together -- the bank at this point has ^a preference for regional schemes as distinguished from individual loans -- and you could establish one for the Caribbean, one for West Africa, one for the west part of the Indian Ocean, and so on; to start with. You can start with say, three, and if they want, you establish three or five more. And get people together working. What we are really interested in the

international order to make people work together better -- people that are neighbors in other respects but, for some reason, in the oceans they don't work together. And I think we could accomplish that by starting with the regions and we don't have to immediately jump into something global.

NSG: Mr. LaQue. Frank, are you on this point? I don't want to. . .

LaQUE: Yes, I'm on the point, but I am not in a hurry.

NSG: Mr. Ambassador, please.

ENGO: I think the point is well taken; again, at the African level ~~there~~ ^{this} is a sentiment which is reflected in our declaration. Cameroon, for instance, in ~~1968~~...1969 in Geneva, I spoke at length about the question of regional arrangements; and I don't think that one has quite understood it as it should be. But we have a type of problem ~~that has developed~~, let me say in Africa specifically. The suggestion has been made first of all that we should establish regional authorities, for instance, to cater not only for the exploitation of resources in the economic zone, which is the primary concern at the moment, but also to enable us to compete favorably in the situation which will be posed in the international area.

Now, the young countries have a basic problem of technology, as ~~we~~ ^{you} know; you cannot talk about the territorial sea at all, they are nervous. But one has to convince them that it is in their interest to cooperate even with regard to the exploitation of the territorial sea. Now, the big

fear that ^{must} ~~most~~ faces us is to what extent do you think that ^{the} developed countries are going to sit by and encourage the formation of such regional bodies as are likely to compete or, in fact, to monopolize the resources in the area where the developing countries are going to operate? They must recognize that the multinationals are there working behind the scenes. At the moment they are the only ones who have collaborated with the governments of these young countries for the exploitation of resources both on land and on the sea. Now, to what extent could -- given the fragile economies they have at the moment -- ^{their} incapacities in economic terms -- to what extent do you think that the young countries will, in fact, succeed outside the purely political arena, in establishing such regional bodies? This is a major problem. And I think they are going to do something; there might be efforts made to frustrate the establishment of the principle of the international sphere. even in

SOHN:

If the question is directed to me I would say that there might be, of course, some interest in the developed countries -- especially those fishing interests far away from their own shores -- that might be opposed to it. At the same time, I think there is in many developed countries, there is ~~some~~ ^{strong} feeling that the problems of food supply, etc. for the developing countries can only be solved through intensification of their own fisheries. And I think we have a very good example by Scandinavian countries, especially Norway, have been helping various African and Asian countries

^a
 on one-to-one basis. I think they would be even more willing to help if you could do it on a regional basis when they can see much more visibly that this also furthers international cooperation. And it seems to me that it might be possible, ~~and, of course~~. . . the only problem I have with the whole business is the one that Dr. Holt has mentioned, that he feels we already have the necessary capacity to fish, we already have all the vessels, the only thing that is wrong ~~that~~ ^{is that} it is badly distributed; that in some places you have a lot of over-fishing, in other places under-fishing, and sometimes fishing by the wrong people. And perhaps the only thing that might be needed here is some financing that would permit transfer ^{of} the vessels from wrong hands into the right hands.

ENGO:

I am sorry; my major problem is ^{What} ~~that~~ you said now is probably true. ^{Under aid} ~~On the eight~~ program ~~that you know~~ we have at the moment, ~~and~~ we are becoming quite ^{wary} ~~wary~~ of this system in our lives. ^{The thing is that} ~~as~~ long as you have that type of cooperation under ~~this~~ system of aid, nobody comes to give aid unless he is going to gain from it; ~~and~~ our experience is that under that program we are the losers in the long run. We do get something which is better than nothing, but we are not getting the proper share of the profits that come from that cooperation.

Now, as long as that happens, that somebody else is bringing ~~in~~ his technology in that type of arrangement it's all right. What I am afraid of, the question that I pose

is this: if you go beyond that and create these regional bodies on the African level, an OAU enterprise, for instance for fishing, financed from its own sources eventually, developing, it has to get technology, ~~in~~ the boats from somewhere. Now, I do not see that the great maritime powers will be enthusiastic about selling boats to these men. .. to that organization if, in fact, it means wiping out from the African area the long-distance fishermen.

Number two: going beyond that in the economic zone while they may begin to accept some amount of transfer of control to the developing countries; but when you come into the high seas you are asking, in fact, that they should finance or equip -- technologically equip these young countries ~~to displace -- not in fact to displace,~~ to compete sometimes unfavorably with them; and I don't see these nations, from my little experience, being enthusiastic about the establishment of conditions which will, in fact, threaten their ^{particular} ~~declared~~ dominance at the moment.

~~Of course,~~ **I** it is not just a question of power, it is a question of economics, too. They depend on that fish; now you are equipping somebody else to replace you; in that situation I think it is untenable from their point of view.

others ~~(2) won't~~
 And ~~I just want to get round that.~~ You may talk about the World Bank giving loans; they might be enthusiastic about doing that, but supposing no one is prepared to sell the type of ships that will, in fact, enable the African nations seriously to profit from the enterprise, what do you do?

NSG: Professor LaQue.

LaQUE: I am venturing into a field in which I have no native knowledge and zero experience; but nevertheless, I have heard questions raised about the problems that may be faced by long-distance fishermen who wish to fish in economic zones of several countries, which would require them, presumably, to have a license ^{from} ~~on~~ each of the countries in which they will be using the economic zone for fishing. And there is a suggestion, ^{that} perhaps these people might welcome the simplification of a license either from an international authority or perhaps, as Dr. Sohn has suggested, from a regional authority which would be usable in any place, and that their revenue from the licensing would be presumably distributed to the countries where the fishing was being undertaken. And perhaps the most practical approach would be the one Dr. Sohn ^{has} suggested -- that regional organizations could set up a licensing arrangement where the licenses would be good anywhere within that region rather than individual licenses for each country within the region, and that the revenues would be distributed appropriately, hopefully, to the countries that are involved in these arrangements.

There is another possibility with respect to the transfer of facilities. I have heard of canneries financing fishing vessels for small countries where the cost of the vessels would be repaid over a period of time from the revenue derived from the use of these vessels; and this is a mechanism that could conceivably work because the canneries now, I

believe contract with the owners of vessels to do their fishing. And there is no reason why they couldn't perhaps be persuaded to provide the facilities to developing countries to be paid back ^{out of} ~~over~~ the revenues derived from catching the fish that the canneries need.

I think also the people who require ^{the} fish to carry on their business^{es} ought to be glad to have some mechanism to preserve the source of what they need to keep in business by management of these resources. That's all I can say on this.

NSG: Thank you. Sidney, do you want. . .

HOLT: ~~Just~~ A couple of points: one concerning my statement that there is already enough ^{fishing} power in the world and it needs redistributing. That, of course, was in relation to ~~the~~ conventional resources; I wasn't then talking at all about the power required to harvest these unconventional resources. That requires an investment of a rather different kind in any case.

The second point is that I am a little bit concerned about the argument for regionalization, ~~and~~ regional enterprises, if that was what was intended. Simply, in practical terms, the first unconventional resource I would be willing to bet a considerable part of my salary on, is going to be in the Southern Ocean. I don't think we should talk about this as if it's just a theoretical thing; this is happening. The basic question is: what is going to happen in terms of the new economic order to that resource? Is it going to be appropriated by half-a-dozen industrial countries to over-

feed their people? which happened with whales there and now could happen with the krill. This is not theoretical, it's real; and you can't regionalize the Southern Ocean.

NSG: Therefore, the argument for an international enterprise of the sort that we were discussing a few moments ago, oriented toward the direct managed exploitation of living resources, ^{with} ~~would~~ that in mind - I mean that was one of the major considerations. . . .

HOLT: I think that there are some questions that could be kept separate. I don't think that the operation of an enterprise necessarily implies a monopoly, nor does it necessarily go with the common heritage idea. I am not trying to split it into unrelated questions but they are not all the same question. There is a whole constellation of possible arrangements to come; but it seems to me that, ~~if the~~ . . . again talking about the concrete possibilities that in, let's say, -- I mean obviously this is a prediction of the future, but let's say we are going to get in the next few decades fifty to a hundred million tons of krill out of the Southern Ocean, who is going to benefit from that, and in what ways is that harvest going to contribute to the redistribution of wealth of food in the world? By allowing anyone to fish there and peeling off some tax from them? By having an international enterprise competing with those national enterprises, by having a monopoly of an international. . . what? There are many possibilities; but I really think it should be discussed in concrete terms.

NSG: By us?

HOLT: No; by the world. But not ^{being} ~~by~~ being misled into this magic word of regions. There is no point in forming a regional enterprise in the Indian Ocean because there is nothing to catch in the Indian Ocean as far as we know. . . .

NSG: I was just going to ask. . . . ~~will not interrupt.~~ . . . Ambassador Engo, Professor Sohn, and then I call your attention to the fact that the clock is moving inexorably toward lunch. It probably will be fish; oh, no, it can't be fish today, it's Thursday.

ENGO: I am sorry, but I just wanted to point out that what we are talking about here is not regionalization of the ^{space} ~~states~~ as such, ^{but} ~~or~~ creating regional bodies to enable young countries to participate in the fullness of that type of activity, [↑] this is the problem we are talking about. As far as the economic zones are concerned it is for the region to decide whether they want to manage them regionally or not; but this is a matter which we still are working hard on at the African level. Because if you don't, somebody else from outside will do it. But we are talking about equipping these young countries by setting up, for instance, a regional enterprise to help to protect their capacity to participate, to have their capacity to participate. These are the type of problems we are talking about. So that the Africans, for instance, if they had regional enterprise, there is nothing to stop them going to the Pacific Ocean -- I mean that type of thing.

But my big fear is that the developed countries -- and this is not mere power of a problem -- have a very large

market -- I know about the old colonial powers -- in the developing countries. This is a great source of revenue for them. For instance, my country got its name from shrimp. There is supposed to be a lot of shrimp along the coast of my country. Now I think that if you look at the records, in practical terms ^{to me} ~~is~~ what you said, ^{what} you asked for, that about 90 per cent of the shrimp that is caught off our shores is exported somewhere; and the foreign investor takes it away. We get some cash compensation for it, but we don't get the shrimp. We go to our hotels, and people are happy to come into Cameroon and say, "well this is a great country for shrimp; we would like lobsters, we would like shrimp, and so on." They find it difficult to have sometimes; yet if you come to the United States you find lots of Cameroon shrimp all over the place.

The problem that I posed ^{was} ~~is~~ this, that if you set up regional organizations of that type, what will happen is (a) that a long-distance fisherman cannot have access to the living resources in the area as easily as they are doing now; if they come in, they will be competing with a very powerful, politically-oriented group called the "regional enterprise." Thirdly, that regional enterprise will look inwards and see that the local market is ~~probably~~ properly satisfying, just like our respective national governments are doing now. Cameroon no longer imports tea because, in the first place we have first-grade tea in Cameroon; it used to be taken to Europe, put into cans and brought back to us.

Now we do it, therefore, wiped out that type of industry. Lipton is in trouble with that type of thing.

Now if, at the moment, the sardines and the canned fish and all of these things that we import in large quantities into our nations are made locally we are going to begin to effect what happens elsewhere. My fear is that if one is going to do these sorts of things, establish this type of regional thing, we must be prepared for resistance from abroad to the point where, in fact, there will be a refusal from sources to sell the ships and to train our personnel to have the information to know how to operate these things. How does one get round that type of problem? That's the question I. . . .

NSG: Professor Sohn. . the last word. . . the next to the last word.

SOHN: I think that the last question can be really answered in terms of the capitalist ~~the~~ economy, namely, if proper payments are made, anything can be bought. ENGO SAYS SOMETHING IN THE BACKGROUND WHICH WAS INAUDIBLE TO WHICH SOHN CONTINUES. No, I think we have seen, for instance, in the tankers market in oil transportation that people were building, in fact, too many tankers for what we need at this point ~~and~~ simply on the assumption that they might be needed, and they ^{were} willing to sell it to anybody that was willing to buy, and now they are willing to sell them for even half the price that they originally asked for. And I think similarly something like that might happen here.

if? I understand

The special problem here ~~arise to the extent that~~ Dr. Holt correctly is that you are faced with a new type of fishery; fishing for krill is quite different from fishing for something else; or fishing for octopus and the other creatures of the deep sea would again require a different technique; developing new types of boats and training people for it, for this kind of fishery. And my point was that instead of doing that in such a way that it would benefit those that have benefited from it in the past, the developing countries could get into it from the very beginning if they get together; that instead of Cameroon doing ~~this~~ ^{it} by itself, and Nigeria doing it by itself, etc., I think they would have a much better bargaining power with the International Bank to give the financing with the builders of those new types of fishing boats, if they get together, instead ^{of} competing against each other with those people. And then, of course, would follow the third important point that you made, that if you are going to produce a new kind of ~~fish type~~. . . of marine type food, you can yourself establish, through that same regional organization, local canneries to deal with it, and they would not be competing with anybody else because nobody else would have this kind of canneries, at least at that point. And there is no reason to establish new canneries to process krill, to establish them in the United States when they can be ^{as well} ~~also~~ established in the Cameroons and some other places.

So, it seems to me that what we have here again that

I didn't realize before I came here today, that we have here a new opportunity, like we have in the seabed, of starting something completely different; and in which there are not yet any vested interests, but unless we do it fast the vested interests are going to develop ~~them~~, and this is one of those great opportunities -- it doesn't come very often, and perhaps we could get hold of it while it is possible.

NSG: Thank you, ^{that's very moving} ~~Louis~~; Elisabeth, you want to end?

EMB: Well, in conclusion of this discussion perhaps . . . I am grateful for Louis Sohn's suggestion to stress more the possibility of regional enterprises which I thought we had in . . . I see, I think we didn't explicitly. . . but then I only wanted to say that I was listening with waxing fascination to what Paul Engo had to say; because it seemed to me that in a very concrete and limited example he summarized the whole struggle for the building of the new international economic order. These are exactly the problems they are up against but that's the problems we must face.

NSG: Sidney. . . . you are going to have the last word.

HOLT: Two very brief points: one is that you might find that the developing countries did not have a united opposition to any attempt to get into this, because I think a number of small industrial countries are likely to go along with them.

EMB: ^{Holland Sweden}
Holt Yes, yes, a few who are not large enough or interested enough to go to this alone, but who have ~~the technology, or~~ has some of the technology.

The second point is, I think that although this would require -- I am thinking again still of the Southern Ocean -- this would require fairly large-scale, and certainly technological research ^{ing} capacity -- it is not anything like the level of technology required to mine manganese nodules in very deep water. It is a linear development of normal fishing and processing; it's special, but it's not unique and it's not the highest of technologies. It's perfectly within the capacity of the developing countries either alone or in consort with a few of the smaller industrial countries to do this. I am quite certain.

NSG: Friends, we really must break off at this point. We are ten minutes beyond the hour for lunch.

Mr. Palma, I think you. . .

PALMA: Just one word in boats: some developing countries already are producing boats for export. In the case of Peru, for instance, we have sold to Cuba a shrimp boat, to France a tuna boat, and so I believe all countries, Mexico perhaps and other countries in other areas are able to produce some type of boats could be widely used.

NSG: Thank you. Well, we should break ^{now} ~~out~~; and we'll shift the topics then, after lunch. Thank you, all.

E N D O F M O R N I N G S E S S I O N

EMB
has copy

TRANSCRIPT: CONFERENCE ON THE NEW INTERNATIONAL ECONOMIC
ORDER AND THE LAW OF THE SEA - PM SESSION - FEB. 5, 1976

NSG: ~~Mrs. Borgese has an announcement or two or three, and
perhaps she can make those; then we can start. . . .~~

EMB: Right, three announcements: one is an explanation of
papers that are being distributed -- the first one, of
course, was Ambassador Hoveydas; the second and the
third one are two documents that have been adopted
respectively by the symposium under the sponsorship of
Algeria last June on the new international economic order
in general and I was there. I participated together with
my colleague Ambassador ^{Alzamora} Altimoro from Peru. We were in
a group that was responsible for ^{the} drafting of the little
document that we have circulated here, which was endorsed
by the Algerian government; and it is interesting because
it reflects very much the kind of approach that we are
talking here about today. And the other document was
adopted by a student symposium held at the University of
Malta ~~last month or~~ two months ago, and it's an interest-
ing attempt to apply the principles that are evolving
from our negotiations to ^a ~~the~~ region, namely, the Medi-
terranean. So, for your information, we circulated both
these papers. You will receive two more papers which are
by ^{Mr.} ~~Professor~~ David DEES [?] and which deal with the problems
involved in getting rid of atomic garbage and the projects
that are being studied to dump that somehow in the middle

of the Pacific. These are rather technical papers, but I think they will be of great interest to you because obviously, energy in the oceans is a big part of the economics of the oceans; and this is a problem that will have to be faced. So much for the papers.

Now, as to social announcements: tonight, as I indicated yesterday, I am looking forward to the pleasure of seeing you all in my house and that would be at 7 o'clock. So you give me time to do some cooking between the meeting and the evening.

? You mean you do cook?

EMB: Of course.

SAME VOICE: Okay, I take note.

EMB: So that is at seven, and transportation will be arranged for you at a quarter before seven. And tomorrow Mrs. Danielus is kind enough to ask those of us who are going to be around after the meeting to come to her place between five and seven did we say? between five and seven, so transportation will be arranged for you at quarter before five to have a bite and something or other to drink.

So, on this hopeful note, let us get back to work.

NSG: That was a very happy announcement, thank you. Now, let me just summarize for us where we stand. We changed our schedule just a bit: ~~This morning~~ We are dealing with Part 2, as you know, of the basic single

negotiating text in our critical volume -- the blue and white bound volume -- then we have been dealing with Part 2, Section II on page 112 following, this is the fisheries issue. Now, there are so many interesting questions with regard to that issue, it is almost a shame to leave it, but we must, at least for the time being, and turn back in the volume to Part 2, Section I, beginning on page 87 and that Section I is entitled in our manual, if I may call it that, "The Institutional Requirements of the International Management of Mineral Mining." Now rather than do what we did yesterday, proceed paragraph by paragraph more or less through the text, we propose, with your concurrence to continue as we did this morning in a variant phase of dealing with the general question of the institutional requirements of the international management of mineral mining, as we did with regard to fisheries and have our discussion led by Ambassador Engo, if that is satisfactory to you. Would it be satisfactory to you, Sir.

ENGO: I have no objection to leading; but I don't know if I am in a position to commence because I. . . would you like me to. . . .

NSG: Well, I think the problem is to deal, first of all, with the general question of the scope and functions of an international seabed authority -- those functions implied or made explicit being associated primarily

with the possibility for the international management of mineral mining in areas beyond the national jurisdiction^s of the riparian states. Secondly, then, to explore the structure, organs, the natural provisions not necessarily in all the detail that we have already read but looking at the particular significant elements here that need to be clarified, consulting among ourselves and with Professor LaQue, Frank LaQue, about some of the technical problems that are involved; and then going ~~through~~ ^{to} pages 98 following where there are a number of comments and suggestions that were developed by Mrs. Borgese and Ambassador Pardo. Now, we can do this in a variety of ways but it seems to me that's an orderly way to do it, and perhaps we should not burden you with the leadership charge except that in the light of your experience it would be splendid if you could do that for us and with us.

ENGO:

Well, I believe that everybody has read ~~as far as~~ the SNT as far as the First committee is concerned. I must confess that although this whole thesis was sent to me ^{in Yaounde}, I did not have the opportunity to read it before I left. It came, I think, within a week of my departure and I was terribly busy. and Elisabeth very kindly sent me a copy this morning with suggestions as to areas which I can read; that covered over a hundred pages, I am afraid, and

I do not read as fast as she does; especially when matters are of a crucial concern to me, I tend to study ~~and~~ ^{rather than} just read across. But it occurred to me as a first observation that this paper tends to ^{have} reach^{ed} the conclusion that the text is dealing, I use the word, "exclusively," with manganese nodule exploration in the seabed beyond the national jurisdiction of states. I do not know ^{exactly} where this obviously wrong impression may have been caused, probably in the language I used; but the text contemplates all sorts of resources that can be found there -- all resources in situ. One must look at the definitive paragraph one to find what the approach is. Mineral resources are defined but when you talk about resources, you are talking about resources in general. So I think that it ^{would be} ~~is~~ wrong for one to think that the whole text is formulated in a way that responds to the problem of hard mineral exploitation in the ocean ~~states~~ ^{space}. There are, of course, very many useful criticisms that have been made. The problem of production control is one which preoccupies that committee a great deal at this moment; the developed countries do not want any form of control; the developing countries are afraid of what might happen to land-based minerals upon which most of them depend substantially for their export earnings. I am very

much in favor of production control to the extent that, on the one hand, it does not, in fact, ~~lead~~ ^{bring} to a final stop, the production of. . . the exploitation of mineral resources in the area; and on the other hand, it does not, — activities in the area do not kill the basic source of subsistence for the countries. Part of the problem that one faces in trying to organize, or at least to assemble ideas in this sphere, is the fact that much as one wants to strengthen the capacity of the authorities ^{per-} to/form some duties on behalf of mankind, one, at the same time, must recognize that the authority is going to face considerable problems from without. ~~Now~~, we can do everything to restrict or control production for the authority ~~under~~ ^{we give it} the powers ~~it is given~~; but we must remember, as has been pointed out quite rightly here, that there are other actors on the international scene which would be competing with the authority and which may, in fact, be in a position to give better conditions to the investor. Today we are talking about protecting the young, developing countries. As I mentioned in my introductory material to this Part I, I do not believe honestly that the authority ^{itself} is ever going to exploit alone, this is my belief. There are reasons for this: first of all, I think that

whatever the authority reserves for itself it will find that it is more profitable, it is cheaper in the long run for it to go into joint venture with prospective investors, like states or states-enterprises --^{so} basically, it is cheaper to do so; and I don't see the authority setting up, developing machinery and technology, as expensive as it is, when it can participate directly in exploitation by asking somebody else to produce them. This is one way of looking at it from the business point of view. Politically, I think that the young countries are not going to remain developing countries all their lives. We talked this morning about regional arrangements. There is a growing interest in this particular field in the developing countries and one cannot rule out the possibility that ~~the~~ young countries will either ^{at} bilateral level or multilateral level begin to get together to take an active interest in exploitation of the resources of the area. And what will happen, I'm sure they will eat into what the authority itself has reserved for itself. So you got that type of problem. So I don't think that the authority is going to find it convenient or possible ^{polit. costly} to exploit on its own. Now, on the one hand, you say that the authority should at all times, before it exploits, take into consideration

the fact of the plight of the young countries. I must confess here that I used the most unfortunate language when I say (I think I'll use the exact words for interest) that where the . . . in many words . . . where a particular mineral is being ^{a developing country} exploited within the territory of a state, the territory of a developing country and that same mineral is exploited in the ocean states, then the authority must take into consideration the fact that that territory, that developing state depends substantially in terms of export earnings on that particular mineral. Now, what is territory? ~~is~~ ^{is} the question that strikes me. What is territory? If you are talking about land-based resources, land only, probably the problem is not so grave; but when you add the territorial sea ^{most states} consider that this is part of the territory. ^{with} the concept of sovereignty over the resources of the economic zone you might find that the expression "territory" may, probably in political terms, be extended to the economic zone. So that you are saying to the authority that you cannot do anything if, in fact, it will seriously ^{adversely} ~~obviously~~ affect what happens in the lands, the territorial sea and the economic zone of a developing country. This in itself presents a great deal of problems. It

might cripple the capacity of the authority to do anything at all. This is side-by-side with the fact that the developed countries are now going to have two hundred miles of space, ~~by the~~ ^{? in fact} two super-giants, the United States and the Soviet Union, have so much ocean space available to them that already they can do a lot within their economic zone that can cripple, if they want, the ^{inter}national authority. So that is a type of problem that one does not think about too often in the process of this political exercise of setting up a new organization, making sure that it is not controlled by someone else. I fear that you ^{we} might find that what has happened in the young countries is that we have political independence and yet not economic independence, which is more important. We might be ^{strengthening} ~~strengthening~~ an authority, we get a very powerful authority, and yet, we ^{tie} ~~try~~ ^{the hands} to have a better authority in a way that it is still controlled by the technologically developed. That is ^{the} ~~a~~ type of problem that I think we can talk about. It has been raised here somewhat out of proportion, I think, but it is good for someone to think about the extreme difficulties in a way that makes the conference begin to focus on that point and make provisions for that ^{type of} ~~contingency~~.

I see also the criticism here, that is on page 99 (e).
 It says "that it is more than doubtful that the authority can implementⁱⁿ/any meaningful fashion the equitable sharing by states and the benefits derived from activities in the area." Reference is made to Article 23 (3) when it says, "activities to which reference is made are exclusively related to manganese nodules exploitation." I have put down here 'why?' ~~I do not know~~, I think Elisabeth might wish to comment about that.

BORGESE: Well, it seemed to us that there was a certain lack of clarity in^a situation~~o~~ where the authority, ~~is~~^{yes}, as you point out, in principle, is to deal with resources in the area; but in practice, of course, the whole structure is geared to the production of manganese nodules -- the enterprise, all the provisions made. I mean, for other activities, there is no structural~~al~~ back up.

ENGO: I wonder what gives one that impression; because the enterprise that is set up now, the enterprise is ~~a~~^{the} business arm of the authority; and the enter-
 -ur
 prise is struct~~ed~~ in a way that it can handle any resources, which is the subject matter of the jurisdiction of the authority -- not just nodule exploitation. This is the impression that I have; I mean, this is at least the impression I try to create. There is no place where we talk exclusively about

mineral resources, mineral resources throughout,
~~it's~~ just resources.

BORGESE:

But, if you look at your ~~ten of your~~ annex I mean
 I do not think ~~this~~ applies to oil.

ENGO:

No, but we are talking there about conditions of
 exploitation in a particular context; there is
 room. . . I must confess, first of all, that ~~with~~ ^{it was out of}
~~regard to~~ compromise, that I accepted it, ^{at the very last second} ~~the very~~
~~least I can do~~ ^{the} to adopt annex one. Some unfor-
 tunate things happened, which I am sure you must
 know, but I had ^{at} at the last ^{minute} ~~meeting~~ to decide to
 produce a text myself -- the draft convention
 itself and I was going to reject that part because
 I ~~did~~ ^{had} not ^{had} ~~have~~ time to study it and to bring it
 into tune with the main part of the convention.
 So, at the moment I think that one should look at
 the main part of the. . . of part one itself and
 anything that appears to be inconsistent with it
 at the moment, I cannot take responsibility for
 it. But they are very broad conditions, of course;
 they are broad principles. ~~And~~ I just hope that
 when the detailed conditions are worked out
 eventually, and the rules and regulations are worked
 out by the authority, they would take into con-
 sideration all the types of resources in the
 area.

EMB: But we were looking at this very problem from two points of view: one, the structural embodiment of activities; ^{these other} and second, the physical limits imposed on the work of Committee One by the boundaries proposed by Committee Two. Now, if you take the second factor into account, I mean, practically speaking at the moment for the next decades at least, the only practical resource available is the nodules. In the future, who knows? something else may happen. But for the time being it seems that practically speaking one is concentrating on the exploitation of the nodules.

ENGO: I do not think a problem in the minds of most people. ^T That may be so, may be so; but I don't think one should read into the text that ^{type} ~~out~~ of ideas. The text has been elaborated in a way that ~~care~~ ^s for all, but we are using the nodule exploitation as an example, a model, for what is going to happen because at least we have experts now who know ^{say they} something about that. But the text has not directed itself. . . addressed itself only to that situation. It has used that situation as a model and no more. So I don't think the fear would be justified in the use of the language. As you know, the ^{? mainly?} ~~real~~ definition, the criticism, as to why I would choose to define resources on one hand, and then mineral resources on the other.

My answer to/^{it}is that we are not concerned only with mineral resources here; we want to make sure that when the time comes, ~~the~~ the scientists tell us that there might be more to it than mineral resources. We must be in a position to respond to the new revelations in that field. But I don't think, in reading the text as it is, ^{one} can say that it is basically structured for that alone, even with the conditions of exploitation.

NSG:

There is a phrase here, just to clarify it, on page 98 in ~~that~~ first paragraph, where the phrase is "^{for}all essential purposes." I assume, when I read that, that recognition was being given to the fact that the SNT did not restrict itself, with regard to the international seabed authority to the exploitation of manganese nodules ~~brought~~ ^{but} that in effect, given all other circumstances, for the present, at least, that turns out to be the resources of recognizable potential. Now, this then leads to the argument (I am just speculating to help us move forward), leads to the argument that if that is the case, and, if indeed, it is true that the manganese nodule exploitation will henceforward not be restricted to the area under the seabed authority but at least some of it would be associated with areas under the functional sovereignty as within the 200mile zone or extension, of the continental shelf

of riparian states; and if, moreover, the technological requirements for exploiting deep sea manganese nodule deposits are extremely expensive and the returns will be relatively small, then the whole notion of the authority, as described, is in jeopardy. I am only trying to summarize an argument, as a layman, as I see it.

Professor Sohn.

SOHN:

I ~~mean~~^{think}, the basic issue ^{that} this particular draft raises really does not relate to the definition of the resources; it relates to the definition of the zone. And I think what Elisabeth is still fighting is a decision which I think is 99 per cent made by the conference already, that most of the so-called oil resources that we know about today would be in the economic zone and they would not be on the continental shelf if you have that ^{extra} extension of the continental shelf, or the continental margin; and not in the deep sea. But I think Ambassador Engo is probably right that we know about manganese nodules, but there are nine million other things that we don't know about; and tomorrow we might discover that one of the supposed sea mounds in the middle of the Pacific or Atlantic you have a gold mine or purest gold, or diamond salt, or something you could easily to exploit as anything else ^{and} it might be easier than even the manganese nodules. And

all those things are possible; still we are trying to draft something for an area about which our knowledge is still abysmally small and therefore, the purpose of the draft is to be as broad as possible and I think para. 4 of Article I tries to do it. For instance, solid minerals in the ocean floor a depth of more than 3 metres from the surface, and there may be millions of them, all bearing ~~salt~~^{? root} and brine like we discovered in the middle of the Red Sea. Again, this might be easily exploit~~able~~^{able} pretty soon, once somebody really starts concentrating on the methods of doing it; and now we know it's not only in the Red Sea, it might be in all the other areas in which the ocean plates are meeting -- all the continental plates are meeting; and therefore there are many things, and ~~I think~~. I agree with Ambassador Engo that ...saying that this is fundamental area of appreciation, is quite wrong; and if it is, it's not caused by this fact, but is caused by the fact that ^{some} other things have been excluded from the zone in the first place -- ^{from the} zone, but not from the definition of resources.

ENGO:

Actually, when you mention that for all essential purposes, I think if the word "exclusively" had not been used, there would be less criticism. But you said "exclusively" and that makes it a little ^{un}comfortable.

NSG:

It's an extreme statement as far out as it can go. ~~But~~ ^{what} about the question, Sir, of the impact on the viability -- that is really the economics of an international seabed authority, at least in the short run; the question must arise, I'm sure it occurred to you, to your colleagues, as to whether a seabed authority, given the territorial setting within which it would operate, restricted as it might have become; and given the de facto limits of what is exploitable, based upon our current knowledge -- ~~simply know the~~ ^{accepting those as} givens, to what extent is the seabed authority of the sort envisaged a viable entity? Could one reasonably assume that one would get support from various countries? The support would be going the other way, at least for the time being, it would be a matter of investing in such a seabed authority, keeping it going until some time in the future, and the future is unclear; there might be profits however ~~designed~~ ^{defined} that would accrue to the activities of such an authority. Perhaps this is outside of our province.

ENGO:

I wonder if one can actually probe into that type of question at this stage, because no one has all the data. I don't know if anyone can say with certainty now that there is nothing there for the authority at the moment. In fact, the evidence one

has is that most of the ~~valuable~~^{valuable} nodules now
 lie actually in the international area. So, I
 think knowing also that those who are involved
 in research at the moment are going ahead with
 finding models and prototypes that can go to the
 deepest possible parts of the ocean, well beyond
 the economic zone area are convinced that it is
 a viable thing. They would not be spending the
 millions if it were not. At least, ~~with~~ those
 with whom I have discussed have left me no doubt
 that there is, that it would be viable. But up
 and above that I think one doesn't settle down
 to complacency merely because one has doubts in
 that direction. Our mandate ~~as established~~^(is to establish) is to
 examine the methods, the ~~series of~~^{procedures for} administering
 the common heritage of mankind. You've got to
 set up machinery for determiningⁱⁿ what to do with
 the common heritage. This is our preoccupation at
 the moment. Now, if the common heritage is not
 good enough, I think that the authority, which
 consists of all members of humanity or members of
 mankind would study the situation as it comes.
 Now instead of establishing very many organs or
 sub-organs which are proposed, one can say for the
 moment you don't need so + so. If you
 find that the nature of things, the development,
 the scientific knowledge that we get later demands
 it, we would, in fact, adjust and restructure our

organization to meet this type of eventualities. At this stage we ought to start with something; you got to say that we cannot, under the United Nations system, administer the common heritage effectively. I think the conclusion of the conference is that you need to establish a new authority. Now, what does that authority do? You must give the authority sufficient power and scope within its function to be able to meet the exigencies as they come. Even with the data that we have, we find great discrepancy in the details, as you go from the East to the West. So I think the truth will all come out when, in fact, the operations begin. We are told, at least personally I have no reason at all to be pessimistic at this stage.

NSG: Professor LaQue did you want to comment?

LaQUE: If I may.

NSG: I don't know whether I should ask you or whether you would signal me when you. ..

LaQue: Whenever it's appropriate, and if it's appropriate now I will do it. I propose to present a mixture of facts, opinions and conclusions which, to some degree overlap. ^WWhat I call, ^{T ?}a fact, some one might define as an opinion. ^{Since}I brought a map which deals with what I consider to be one of the facts. Maybe

I should go over it by the map rather than try to deal with it from here. The detail of the map is not very visible from far away, ~~it might be useful to~~ I am going to try to deal with this in two major aspects: the one would deal with the areas that might come ~~onto~~ ^{under} the jurisdiction of the authority; and the second would deal with the money that might become involved in the operations of the authority. I'll start first with the areas. ^{as} Some of you may know the UN staff ^{has} suggested that in the near future -- what I mean by the near future ~~enough~~ ^{between now} perhaps ~~at~~ the end of this century -- the nodule mining operations ~~would~~ probably could involve the recovery of something like 15 million tons per year of nodules. My own conclusions, based on the capital requirements, the ~~relations~~ between the future supply and the future demands of nickel. I hope you will agree that nickel is the critical element in determining the economic viability of nodule mining. My own conclusion is that the more probable level of production will be five million tons per year; but to avoid too much of an argument, I am basing my calculations on the assumption it might be ten. And I have assumed that ^a viable operation would require mining nodules ^{where the} ~~with a~~ population of nodules

for a unit of area would be 20 lbs. per square metre. This is at the low end of ranges that have been indicated by exploration. ^{but} ~~And~~ I have taken the low end -- 20 lbs. per square metre. And assuming that the 10 million tons per year is reasonably correct, the total area of the ocean bottom required to support a 10-million ton recovery for 20 years turns out to be, by my arithmetic, which I have checked several times, and I believe it is correct, 40,000 square kilometres. And this is the total area likely to be exploited between now and some time towards the end of this century. So I have plotted on this map with a little red square here what 40,000 square kilometres looks like; it is hardly visible from across there which makes my point, that it's not very big relative to the full area of the ocean bottom. I happen to put this on the equator because there is a nice, clear spot there; and not because that's the best place. I hesitated to put it ^{up} ~~off~~ in this _____ [?] area which has been defined as the most desirable area for exploitation in the light of present knowledge. And this fits into Arrhenius' theory of the mechanism of formation of nodules. . of nodules, because the conditions in this area are more favorable to the formation of nodules than anywhere

by 1980. Where these are, what their capacity is to be, and the capital investment that we are talking about. I have shown that the new land capacity will ~~produce~~ ^{provide} 400 and some million pounds of nickel. The total investment committed to these is \$1.8 billion. So I have estimated the world capacity by 1980. I have estimated ~~it~~ the future demand for nickel using two growth rates of demand. The maximum ^{that} anyone has proposed which is 6 per cent ~~is~~ compounded, and the least which is 3 per cent compounded. There are year-to-year fluctuations because 1975 showed a use of nickel less than '74; so you can't assume that every year there will be an increase in the world demand. But the long-term trend is somewhere ⁱⁿ between these limits. So I calculated the world capacity in 1985 depending on the scale of nodule mining on the basis of five million tons a year, ten million tons a year, and fifteen million tons a year. So you can compare that with the estimated world needs to see how much space is likely to be left for nickels and nodules. You will find these figures here. Now the rate of growth of land capacity in recent years has been 8 per cent which is greater than the rate of growth of demand. So it seems perfectly obvious that the rate of growth of land capacity is going to have to decrease; and the recent rate of growth has reduced

Mrs. Danahis
A LADY:

the opportunity for the accommodation of nickel for nodules. I think these are statistical types... Could you repeat those last words exactly, again, I think. . . .

La Que

. . . that the rate of growth of capacity for nickel on land at 8 per cent has been greater than the rate of growth of demand. So that the land producers have more than provided for the estimated needs. Have I made this clear? All these things have a bearing and on this basis, this is my basis for choosing 5 million tons a year as being a more rational level of nodule mining than fifteen. I have made this calculation on the basis of ten. So that the seabed authority requires as a ~~mere~~ [?] ~~space~~ [?] of structure appropriate to dealing with this area so far as nodule is concerned. What it may need to deal with otherwise not described resources I have no way of knowing.. But as I said over in Okinawa, I thought that this proposed mechanism is too complicated and too ponderous ~~and~~ ^{than} ~~it~~ ^{what} will be needed to administer this much of the ocean.

~~SKOGLUND?~~

Holt

So, now let's deal a minute with the question. . . I only wanted to ask about your certainty, Frank, of the ten kilos per square metre. That came high as an average over a large area although that might be the concentration in small areas. I am out of

LaQUE:

my depth in the. *always as you well know*
 My answer is extremely simple; if they don't have
 20 lbs. per square metre, it's not worth exploit-
 ing. This is the minimum that would be attractive;
 and so I've cut that in two -- I forgot to mention ^{this} --
 on the assumption that the recovery operation will
 only be ⁵⁰~~15~~ per cent efficient. Some of my friends
 have assured me that they have developed machines
 capable of taking it all; others say that maybe
 they might not get more than 25 per cent; so I
 erred a little bit on the conservative side and
 used 50 per cent for the purpose of my ^{arithmetic} work. If
 there aren't ^{2 lbs per sq foot or}~~30~~ lbs. per square metre it's not
 likely to be a viable operation anyway.

Holt
 SKOGLUNG?

That doesn't tell me what the actual area of the
 administration would be; they'll go to where there ^{is}
 20 per square metre within a general area, but the
 actual area of competence in geographic terms might
 be much greater, might it not?

LaQUE:

I think the chances are that in the good areas here
 the population nodule is going to be greater than
 20 rather than less; so that my estimates are con-
 servative rather than optimistic. ^{Have} So I made this
 clear.

NSG:

Frank, can I raise another question? I am very bad
 at accounting, I can't balance my check book, and
 things like that. You said that the rate of land-

based nickel production was increasing at something like 8 per cent, or had been. . . ~~capacity~~
 LaQUE: *LaQue* I said capacity not production. Capacity.
 The figures are in here.

NSG: . . . but demand was of the order of 6 per cent. . .

LaQUE: . . . that's the maximum. . .

NSG: . . . and it could be as low as 3; now where I am lost is at that particular juncture of, presumably capacity far exceeds demand, that is capability production far exceeds the rate of increase in demand; and presumably, if this is projectable into the future, at what point do the ocean bed nodule sources of nickel enter the picture? Presumably they would be closed out entirely, unless they present significant economies for production. .

LaQUE: There is a prais hope that it may be more economical to produce nickels ^{from} and nodules than to produce nickels from land ores; there is also ^a political, if you like, aspects. I would think that people investing their money that will be required, it will take on the average \$5 per lb. of annual capacity to get into the business; so that a million ton a year nodule operation which would produce 30 million pounds of nickel would require capital investment of \$150 million by somebody. This would be a restrained influence because, as I have indicated, they have already committed to \$1.8 billions to land projects; and if you took the U.N.'s 15 million tons per year

level of operation you would then be talking about 15 times 150 million; you would be talking about more money than is likely to become available. These are what I call facts.

HABER: What did you allow as an inflation factor, there, Frank.

LaQUE I didn't allow anything; I assumed that inflation will increase the value of the metal to the same extent that it will increase the cost of getting it. I'm just balancing one against the other.

Now let me deal with the money involved. I doubt very much that the metals and nodules by the end of this century will represent more than 10 per cent of the total amount of these metals that will be used; that's probably a high figure. In 1972, the total world value of production of manganese, nickel, copper and cobalt was a little under \$10 billion. Assuming that the same dollars are still around, if ten per cent of that comes from the ocean -- ~~I am~~ ^{we're} talking about a total value of that value of one billion dollars on the market; ~~then~~ if you assume that if everything works fine and that it was profitable at a maximum probable ~~possibility~~ ^{profitability} of 20 per cent, we are talking about \$200 million as the revenue that might come to somebody. If you take that \$10 billion as the total value of 1972 and relate it to the world's Gross National Product

for 1972, it turns out to be 0.5 per cent; and if you assume that by the end of the century 10 per cent of that would be what you would be dealing with, you have .05 per cent as being how much you could move around to effect the new world economic order; and if you ~~peel off~~ ^{realize} that the value of nodules in the raw form at the point of recovery in the international zone would be only one-third the market value of the metals. And I arrive at that figure because Japan is buying ^{New} ~~in~~ Caledonian ore for one-third the ^{market} price of nickels. So that two-thirds of the value will be added by transportation, refining, marketing, whatever; so when the smoke clears away we are talking about something of the order 0.02 per cent of the world's Gross National Product as being derived from nodule exploitation by the end of this century. So, these are what I call facts. I interspersed here and there my opinions about the application of these facts ^{to} ~~in~~ some of the things.

I have made a number of other notes here which are not pertinent to what I am talking about now, but which I think are pertinent to the nature of the arrangements that might be made to administer these resources and I will, if you like, before entering these comments into the discussion

if you are coming to a discussion of the institutional arrangements and how the seabed authority proposes to administer this exploitation.

HABER: . . . projecting present major uses for nickel?

LaQUE: Currently the present major uses of nickel, the principal market for nickel is in stainless steel; probably the next major market is in plating. Down below these come super-alloys so-called which are ~~also~~ the components of jet engines and gas turbines; and then we come to the chemical and process industries for corrosion ~~existing~~^{resisting} alloys, petroleum refining chemicals production and what-not; and you come to alloy steels used in automobiles, for example and other things. Each automobile used to use about 5 lbs. of nickel per car; most of it is plating, but some in the crank shafts and some in valves, and spark plug electrodes and what-not.

Another growing use, subject to a great deal of current uncertainty, is in ~~the~~^{the} nuclear power industry where it takes about 500 lbs. of nickel for ~~mail order~~^{? ?} capacity to build a nuclear power plant. If you ~~glue~~^{believe} some of the projections of the extent to which nuclear power will become a major ~~force~~^{Source} of power, you can do your own arithmetic. But I think these are the major uses

Ash FKG?

of nickel. Nickel is something like the organism that dies at the head and grows at the tail, or vice versa; there is always some uses being lost and some new ones being generated. But also we have the matter that ~~as~~ ^{as} ~~of~~ the developing nations achieve their goals of greater development and industrialization, the requirements for nickel are going to increase; just ~~like~~ ^{by} population growth, development of economies, and what-not without any changes in the ~~way to use~~ ^{major} ~~s~~ ~~it~~. There would be more of those uses being undertaken in other countries. Does that answer your. . .

HABER:

Yes, it does; I was under the impression that in fact, if you delimited it ~~to the developing countries~~, to the developed countries; and if, for example, you project the fact that the projections on nuclear power plants may very well drop considerably for one, and the use of ~~stainless~~ ^{is apt} ~~ness~~ . nickel in automobiles will ~~have~~ to decrease, if you also project a decrease in the production of jet engines, all of which is quite possible, I wonder how your ~~production~~ ^{projection} could hold up if these things were to occur.

LaQUE:

I think the swing would be between the 3 per cent growth rate and the 6; ~~that~~ ^{whether at} would be closer to the 6 or closer to the 3. ~~Now~~ nuclear power uses a

great deal of nickel. If it were to disappear and replaced by coal gassification or ^{oil} shale recovery, or whatever, these also require great amounts of nickel ^{for the operation?} ~~so they uprate~~ it; so this would be a trade-off between nickel required for one method of generating energy and the nickel required for another. I have been discussing lately with people materials to be used for the generation of energy to the temperature differential between the bottom of the ocean and the top which will require the use of corrosion-resisting alloys containing nickel. ^{for the equipment} It is hard to isolate every conceivable development and measure its probable effects. But I think in the long run you must assume that the market for nickel is more likely to increase than decrease.

HOLT:

I presume that 90 or 95 per cent or something like that of nickel at present produced is in fact consumed in the developed countries, can you tell me what is the situation regarding recycling. ⁺ is it a very high energy cost to recycle nickel? ⁺

LaQUE:

Well, the energy cost is fairly high. A great deal of ^{the} nickel is used in combination with other elements, chromium, molybdenum, iron and what-not; it is not likely to be that you would recover nickel as such ^{by} ~~for~~ recycling. You might be able to use stain-

less steel scrap containing nickel and chromium for making raw alloy steel containing nickel and chromium, or more stainless ~~steel~~. But nickel itself is not likely to be recycled.

?
SKOGLUND

And it's not worth doing it at present; it isn't done. I don't mean as nickel, but I mean as ~~going~~ ^{to alloy} ~~into~~ alloys.

LaQUE: Oh yes; there is a tremendous amount of nickel scrap being used - nickel alloy scrap.

HOLT: What proportion of the total annual production would that be? Less than 5 per cent?

LaQUE: I can only guess that it could be a third.

HOLT: Oh, as much as that.

NSG: May I ask another question myself? In your projections of land-based nickel production over the next 25 years or so, are you assuming a constant quality of ore in terms of nickel content? Or perhaps I should put it another way: isn't it likely that as time goes on the metal content of the ores is likely to decrease and therefore raise the costs of producing land-based nickel, which might move in the direction of support for a seabed enterprise. . . .

LaQUE: The nickel content of lateritic ores, as far as the nickel is concerned, makes them competitive with nodules; and nodules have the advantage of containing copper, which the lateritic ores do not.

And the copper is the key, I think, to the success of nodule mining because it is possible to deliver lateritic ores to an adjacent refinery -- these ores occur on the surface, you just ~~pick~~ ^{scrape} them up; you can bring them to a refinery for about a dollar-and-a-half a ton; whereas the transportation of nodules in the middle of the ocean to shore will cost at least \$3 or \$4 a ton; someone will say \$5. So that we don't know what the cost of bringing the nodules from the bottom to the surface is; but it is certainly going to be greater than scraping up some _____ with a bulldozer or a drygl?. So that the copper content of the nodules have to take care of the disadvantage of the nodules relative to the lateritic ores.

I don't know whether anyone has done the ~~corporate~~ ^{proper} arithmetic or not, and you can draw any conclusion you like from what I will tell you: that my former company is committing \$600 million ~~apparently~~ ^{currently} to lateritic ore development in ~~the~~ Indonesia and Guatemala and is committing not more than \$50 million to deep ocean mining. Now, if you want to conclude from that that they think the odds are 12 to 1 in favor of the land ores, you are free to do so. People ask me what is the incentive to people doing what we are doing now,

spending money to develop nodule mining? There are two major incentives: probably the most important is that sooner or later we are going to have to go to the oceans for these metals; the land ore reserves are not inexhaustible -- whether we are talking about 50 years, 100 years, 150 -- but sooner or later. And sooner or later, companies like mine have to decide when they need more capacity, shall we do it on land, or shall we go to the ocean? And to answer that question you must have established the technical and commercial feasibility of mining the ocean. So the urge to do something in the next several years is not so much to satisfy a tremendous demand, so much as to provide the basis for future decisions; and when you look at the countries of Western Europe and Japan and the United States, with particular reference to nickel, you find that none of these have any nickel within their national boundaries. And consequently, for their own future security they have to establish to what extent they can expect to be able to get their needs from the ocean when the need arises. So the urge to do something is based primarily, I think, on these considerations ^{and} not because there is a desperate need for a new source of nickel within the next few years. Is that all reasonably clear? I have

copies of these statistics for anyone who might want to have them for their own conclusions, use, or what-not. I merely offer this information to indicate what the seabed authority is going to have to arrange to do something about in terms of area, in terms of money, within the next few years. And I have suggested that the mechanism to do this should be more properly related to what it has to do than the complex mechanism that was described in the first negotiating text.

I would like to suggest, while I am at it, the possibility of a sequential approach by the seabed authority -- that an approach, appropriate to the early ~~statis~~^{stages} to be followed by a more extensive or more complicated arrangement to deal with the next stage, leaving options for the second stage that needn't be applied in the first stage.

NSG: I'm sure that most of us perhaps would like to have these data, Frank; we can get more run off.....

LaQUE: enough copies for all; and if anyone wants them, why, they are here. I'll put them on the table here.

NSG: That would be just splendid; thank you very much.

Are there any further questions or comments related to this particular presentation? I'm sure the information will be valuable, invaluable for

our further discussion. If not, then I wonder if we might not return to the comments on the negotiating text, the SNT. Ambassador Engo, would that be satisfactory to you? And then perhaps go through some of these points systematically. Would that be useful? We were doing that yesterday, and you weren't here; and it was very profitable in terms of Part I and we departed from that procedure today. I think it was also profitable. So there are two ways to ^{skin}~~begin~~ this ^{cat}task. Let's go back perhaps to our first way. How should we do it, though? Could we simply run through the various paragraphs, start on page 98-99? Well now, there are certain assertions here (if I may take the initiative for the moment) that have been questioned. One of the basic questions is related to the exclusivity of manganese nodule exploration ^{and} exploitation in the seabed areas for which the proposed new authority would be responsible. I think we have taken care of that; we recognize that that is too pointed, too specific a statement. Now, we also, I think, have taken care of -- at least we have opened our minds to the problem of how one takes into account the possibility that production of metals from the nodules will impact upon the economies of countries -- particularly ^ydeveloping countries -- that produce

the same metals from land-based ores. We recognize that to be a very difficult problem, ^{but} ~~and~~ we need not try to solve it here. We also have discussed to some extent yesterday, moving down now to the next paragraph, that the unresolved issue of ^{baseline,} baseline demarcation, the retention of the legal continental margin beyond 200 nautical miles of patrimonial sea, other considerations will bring under the control for exploitative purposes of the riparian states very large areas which will possibly include manganese nodule deposits. Now that proposition I believe was questioned yesterday, if I am not mistaken. Ambassador Engo, please; yes, please.

ENGO:

I presume that these comments are made in relation to the first part of the SNT, as you call it. I don't think that that text, in fact, permits, as it said here, give this question to states to indiscriminately fix the limit of their national jurisdiction; all that it ^{seeks} ~~seems~~ to do is to call on states to notify the international seabed authority on where, in physical terms, these limits may be placed in the light of the definitions ~~we~~ ~~are~~ given by the convention. Although the subject matter of limits appears in the mandate of the first committee, the first committee is not, in fact, trying to resolve what the actual limits will

be. The second committee will decide where the territorial sea ends, and what the outer limit of the economic zone will be. So what Article 2 of Part I does is merely to call upon states to register ^{in front of} ~~for~~ the authority where, applying the criteria given by the convention the limit falls; this notification will enable any contesting parties to register their protest, and the matter will be resolved. It does not seek in any way or does not give the discretion to any coastal states to, in the language used, to determine at their discretion, the limits of their national jurisdiction within the highly flexible baseline on the continental shelf, etc., etc. The text does not address itself to that.

?
~~PALMA~~ Sohn
~~HOVEYDA(?)~~

And, in fact, in the text of committee 2 on this very subject, they are thinking of having the boundary commission, even if this boundary commission cannot be deciding ~~the~~ disputes between states, it would be entitled to decide disputes between the authority and states.

NSG:

Engo

. Yes
 I must be a devil's advocate here, and so I am doing -- in the context of yesterday's discussion then, where does that leave us with the proposition that, given the wording of the SNT with regard to these matters as it now stands, it would be possible to use the example that Arvid Pardo suggested for

the United States to draw baselines from points extending from the north-west ^{corner of} ~~quar~~-near the state of Washington, to Hawaii, and down back to the south-western tip of California, thereby encompassing very large areas of sea bottom -- sea and sea bottom. This came up yesterday; we had a long discussion about it. I can only say that I wish you were here; we all do; and that was the context within which this remark is stated -- that even such enlightened countries like the United States might well be disposed to stretch the rather loose language of the text to its own immediate short-term profit, or short-term profit. So we had harsh words for just about any country that might be tempted to engage in that kind of activity. But that was the context: the context was. . . .I think it was an extreme statement for various reasons, but the possibility, I thought, was concurred in by most of us present.

?
~~HOVEYDA:~~ ? Sohn
~~SKOGLIND~~

There are two problems: one, most of the major powers are not likely to do this because by doing that they might increase their seabed jurisdiction; at the same time they would also take large areas out of the high seas or cause problems about navigation and other things, which they have said ~~we~~ ^{they} want to avoid; therefore, they would not be likely to do it in order to encourage others to

do it as well. That is one problem. The second problem: whatever ^{? vague oo} they do, what they are in the committee to tax? text, they are susceptible of judicial decision. There is nothing really in the Constitution of the United States about boundaries between states. The Supreme Court has been deciding those boundaries now for 200 years, and has not yet solved all the disputes, but some. And I think the same is going to happen here, and, as I mentioned before, when a boundary drawn by a state, as a result involves the boundary of the authority, the authority would have the right to bring the case against a state before the boundary commission. And that would be one case of very clear international jurisdiction; at least it has been proposed, and I think there would be less objection to that; while, as we discussed yesterday, there might be some objection about boundaries of neighboring states or boundaries between states opposite each other. That is a different issue; and on that issue there is a dispute. But there seems to be much less dispute that the issue of boundaries between the authority and a state should be susceptible of international decision.

NSG: Elisabeth, did I see your hand?

EMB: Well, I mean, I am still concerned about this

issue, as I am sure everybody else is, because Article 2 reads, in fact, as Paul Engo has explained it to us; but if you turn to Article 62 of Part II of the single negotiating text, you do actually not find very much that would give you comfort there. There it is stated that the continental shelf, etc., etc., extends to a distance of 200 nautical miles from the baselines from which the beds of the territorial sea measures where the outer edge of the continental margin does not extend up to that distance, otherwise it goes on to that continental margin. And, as we all know, it is scientifically extremely difficult to define that; it is a very costly, complicated thing to define that. . . .

? Sohn
SKOGLIND:

But the problem here, if I may say so, the way it's put here, you don't have to define ~~these~~ at all if the continental margin is within 200 miles. You only have to divide it into five or seven instances. . . .

EMB:

Exactly; but those are the dangerous ones; and then the following article of para. 3 of article 63 the ^{right of the} coastal state over the continental shelves do not even depend on occupation effects nor/on any expressed proclamation. And these are very open-ended paragraphs.

ENGO:

I am sorry; this is the ^{text itself she is} exception referring to not the. . .

EMB:

No, no no; that's the text of the Single Negotiating Text of Committee 2. Now, our fear is that whatever excellent and innovating is being done in Committee One may, in fact, be eroded by these paragraphs in Part 2. And add to that, ^{that} as we all know, that there is a lot of hustle and bustle already of private companies, and the government of Hawaii, and so on; and they are very actively contemplating which nodules they are going to explore on the national jurisdiction. Mexico, the United States and France will be exploiting nodules ^{under} ~~on the~~ national jurisdiction. There's no doubt about that.

ENGO:

First of all I'd like to point out that I am not a great enthusiast for the continental shelf. I have spoken against it from the very beginning; and I do not think you will find the Africans would accept that. ^{It is a notion they have rejected} ~~They will reject it~~ as completely inconsistent with the economic zone concept. The approach of the Africans is that you have 200 miles, take all there is within it, the left of it is the continental shelf, i.e., I'm sorry international area. I can mention that after ^a ~~the~~ meeting in Kampala you will find that this is definitely the decided policy of the African group.

Then, I think, we are, in fact, going backwards and forwards; so I did not know, the criticism

that I made ^{with} regard to dealing with this ^{under the first committee} ~~matter on the other question~~ mandate.

The first committee can only talk about -- very general things, about the area and its limits, leaving ^{it} to the second committee to take these decisions. As representative ^{we} ~~you~~ can resist [?] there. ~~AS~~ Some of my friends from the countries you mentioned have tried to bring pressure to bear, but I think ^{are receiving a} ~~their activities~~ are counter-pressure. So I think in the context of the first committee's mandate if we can confine our comments to what appears in that text, and then handle, ~~---~~ maybe you can handle this question when you come to deal with the committee two affair where the problem exists. I think that may be a more useful thing; maybe you would like to go on. . .

NSG: Frank wanted to. . .

~~SKOGLUND~~ ⁽²⁾ Sohn. ~~We~~ ^{got} into the trouble originally, because he said that the international authority can deal only with areas which are not within national jurisdiction, ^{no} We have now spent eight years trying to define what is within national jurisdiction.

NSG: Mr. LaQue. . .

LaQUE: I don't want to take up too much time, but there are two points I'd like to deal with. First, I must disagree with Mrs. Borgese on her conclusion

that there's likely to be a considerable exploitation of nodules within the economic zones.

EMB: No, not within the economic zones, excuse me. . . .

ENGO: . . . national jurisdictions. . . .

NSG: . . . within the national jurisdictions. . . .

LaQue: . . . either way; because the people that I deal with, I've never heard any serious contemplation that this is where they will do it. They have all assumed -- the people that I know about -- that they are going to have to do it way out in the Pacific, or somewhere like that, which will be in the international zone. Their planning seems to be directed towards this situation rather than doing it ^{under} ~~on their~~ national jurisdiction or economic zones.

Arrhenius, who was here yesterday, agrees with me on this; as to the occurrence of valuable nodule deposits within national jurisdictions and probable economic zones, assuming that the baselines are from point to point on land and ~~they~~ don't go wandering all over the ocean. If they go wandering all over the oceans, then that's an entirely different situation.

Now, I would like to raise a very critical point about the arrangements with the authority. As I read what I read and hear what I have been told, there is no provision for licensing as distinct from

joint ventures or contracts. I think that the people likely to want to become involved, or expecting to become involved would much prefer licensing arrangements to a joint venture arrangement, or a contractual arrangement. I think the licensing arrangement would be advantageous to the authority, because this transfers the risk of the capital investments to the licensee rather than having it shared in some way by the authority or its source of capital. And I would think that the contractual arrangements or the joint venture arrangements might reasonably ^{be left} ~~elect~~ to become a future option when the licensees have spent their money establishing the technical and commercial feasibility. Now I think this is what I would think would be most advantageous to the authority.

ENGO: It is very interesting to hear you say what you have just said. You are saying, in fact, that those who are developing the technology for the area would prefer licensing.

LaQUE: I think they would. . .

ENGO: Yes, I am coming to the point; but you also said that, under the licensing system, the risk will be transferred basically to the licensee. Even from that point of view, I think the licensee would not be very, — they would prefer to share the risk. And I understand the access to the raw

material itself, to the nodules themselves, of course, will be more interesting from ~~that~~^{their} point of view. But again, speaking purely as a lawyer and more experienced lawyers here, ^{there are} I wouldn't rule anything out of a contractual rather than the equity joint-venture system. The possibility that the authority can still place those responsibilities on the partner in the joint-venture system -- making sure, of course, that the whole project is remunerative and fair to the investor himself -- but the expression contractual, joint venture has been examined in considerable detail and we have not been able to define it so far; all we have tried to do is to seek models from various sources. But I think that a relationship would have to be developed, which is not on the one side licensing which is politically taboo now, if I may use that expression in decent company like this, ^{you} ~~we~~ can't talk about that; and you cannot contemplate, I don't believe, ^{as} ~~what~~ I said, that the authority alone will exploit all the time. Those are the two extremes we have. Somewhere in between, we have to work out some form of relationship between the authority and states' enterprises and the rest of them in which you make sure that the authority is in control, whatever it means. But, as I said before, it is difficult for the developing countries,

the young nations to accept licensing system for various reasons. Very important among them is that ^{under a} ~~on this~~ licensing system all that the authority will get will be financial benefits; so all you can expect from the relationship, under those circumstances are the financial benefits which will accrue to the developing countries. The whole talk about transfer of technology will be shelved -- completely shelved -- because in the licensing system all you do is to ^{grant} ~~plant~~ licensing for the prospective client to exploit; ~~and~~ he uses all his machinery; ^{you} ~~he~~ don't know what goes there, he pays royalties. And that's all you are interested in; you just make sure that he does not exceed the limits of a viable mining site and no more. But the international community is asking a lot more than that; when we are talking about the new economic order you try to help to bring the young countries to the point where they are self-sufficient. You have a type of equilibrium in the international community. If you grant licensing then you would have ^{shot} ~~shoved~~ the ocean space -- or at least the international area -- to these young countries completely. They will not be able to exploit themselves..

LaQUE:

I have a possible answer to this.

NSG:

Mr. LaQue, and then Ambassador Engo will come back.

ENGO:

I am open to ideas.

LaQUE:

Well, my idea may not appeal to you too much, but what I visualize is first that the applicant for a license for access to the nodules within a defined area would apply for twice the area that he thinks he ought to have; that the authority would decide which half they would like to reserve for their own purposes, for any arrangements they might wish to make. I would suggest that at the outset the first half be exploited under license to develop the technical and commercial feasibility at the expense of the licensee. This having been accomplished, what to do with the remaining half would then be at the option of the authority -- whether to use the technology developed by exploitation of the first half; to guide them in their exploitation of the second half; whether to say well, that doesn't interest us any more, we will license the other half to somebody, the same body, or somebody else. But I'm going back to my sequential approach where it provides for one way to do things in the early stages when the technical and commercial feasibility remain to be established, and what to do in the later stages when this has been accomplished. So that the licensing approach by this division doesn't exclude the exercise of what you would like to do at some appropriate time; it defers the things that you want to do immediately

until the basis for deciding what you want to do has become clear. That's all I'm saying.

NSG: Ambassador Engo and then Ambassador Hoveyda.

ENGO: I think that ideally that might sound plausible; but I wonder how. . . first you determine the first period: when does it begin, we know, the commencement; when does it end? Now, that's the first type of problem that you have to face. The second is, you have to take into consideration -- very serious consideration -- the experience of the developing countries in this field. After independence they had no resources, they depended on aid on the one side and again, in order to be, as you say, realistic, for the first period of their existence they granted licenses. But the experience has been that in the long run they have lost, they lost; because the value of their resources that they are giving away for a token sum that constitutes royalties is probably ten to twenty times what they actually get in physical terms. The fact that one must remember is these resources belong to them, 100 per cent, in the first place. Like with the authority, the international community has it 100 per cent. So, if you are giving the international authority, say, \$1 million for a period for a particular viable mining site, in order to participate in that type

of venture the company that is coming in must make a lot of profit; it must make, otherwise it won't go in. There is no humanitarian attitude in business, this is what I found to my horror. But this is the situation. So if you say immediately that there should be a licensing system, first of all you have to give licenses to very many countries and I don't know at what stage one would be able to fix, given the operations already going over a period of time, fix a time when you will begin to switch onto the joint venture system, and who would be interested at this stage? At the moment there is criticism. . . I offered ten viable mining sites; I have been told that that is highly unsatisfactory, that is not enough. Now, suppose we gave twenty mining sites. From the figures you have given us to the end of this century, we are going to need more than that to the end of the century; therefore, between now and the end of this century you'll have an organization that will become a debating club just waiting every year to examine how much revenue comes in. The economic planning council will have nothing really to do; the enterprise will have nothing to do for the next, maybe, fifty years. I think I can see great difficulty from that point of view; maybe you have an answer.

LaQUE:

I'll comment on two points briefly: first off, sharing the risk is already been accomplished by joint ventures. But it is being accomplished by joint ventures in which a single company doesn't think they can assume the risk, they have formed consortia of four or five. I Apparently didn't make my figures clear to you because you say that my figures indicate there will be twenty operations by the end of the century, and I tried to prove that there would be five.

ENGO:

What? I'm sorry; I didn't say that; but, in fact, that strengthens my case. If there are only five up to the end of the century and I have offered ten now; therefore, up to the end of the century if we applied the licensing system the authority will have nothing to do. In fact, the role in promoting international ~~peace or~~ ^{peace or} ~~vis-a-vis~~ the economic order would be virtually zero. ^{That's} ~~at this~~ ^{the} point.

LaQUE:

~~There is~~ ^{Just} one quick detail. In using your past experience with resource licensing: the difference is that the technology for exploitation of the land resources is already developed and proven; whereas the technology for ocean mining remains to be developed, and that's a big difference.

NSG:

Ambassador Hoveyda.

HOVEYDA:

Well, I think we are departing, in my opinion, from

the main subject why we are here. I believe, with Ambassador Engo, if our business is to come to a new international economic order, it is obvious that we cannot go along with your proposal. Your proposal would mean that the old order would be perpetuated. Whatever economic merits ^{you think} is behind your proposal, we cannot, as developing countries, accept it. I take a very, very simple example from your explanations about nickel. You say that for the moment the industrialized countries have no nickel so they are importing it from other countries; and we should look at the future in order to replace that -- for who? what? We are submitting for ~~7~~ years now that if the nickel is in the developing countries, the industry should develop in the developing countries. The basic idea you are developing, Professor, is that what is important is the interest of the industries in the developed countries. So how can we get to hmm. The main problem before us is how are we going to ensure that the principles we have adopted, and the developed countries have also accepted these principles, how these principles which they have adopted in the framework of the six th and the seven special session of the ^{general Assembly} ~~COUCH COUCH~~ are ^{going} ~~they~~ to be translated into practical terms in the law of the sea? That's the problem; that's the

problem. And I think, and I agree with Ambassador Engo, that if it is a matter of giving licenses, ^{why} should we have a new authority? We don't need it; what this authority has to do, then?

ENGO:

Give it to the World Bank. *The money.*

HOVEYDA:

The main problem is to create some authority which would be a sort of world bank for the exploitation of these resources which are in the common heritage. The main problem is this; and as for the technology, well, if there is no transfer of technology towards our countries the situation will be perpetuated. So we say, let the new law of the sea go to hell, we ~~will~~ continue as we are, and one day we will be in a position where we will dictate to you, industrialized countries, what to do. But we don't want that; we are coming there as developing countries, ^{saying ave(?)} ~~say~~ this period of history where a handful of countries were dictating the way to conduct business to all the world is over, let's ^{put} ~~stick~~ together and find the ways of sharing everything together. Okay. That's the meaning of a new order we are building up; we are not. . . why giving licenses about things which are not in our hands? For what we had. . . So let's look at this problem and how we are going to introduce these new ideas concerning the new international economic

order into the business of the conference on the law of the sea. And this is, I think, the subject here. . . the subject matter; and for that there has been some proposals and surely the SNT should be revised according to the new elements which was developed in the framework of the sixth and the seventhth special sessions. That's the main problem; and one of these problems is the transfer of technology. And I would draw your attention in order not to take more of your time here, to page 6 of the paper I submitted which begins at the end of page 5 and finishes at the top of page 7, about the transfer of technology which, in the actual text of the SNT I am not satisfied, not only as the representative of Iran but also as a member of the ~~work~~^{group} of seventy-seven; and I doubted^{ed} ^{if} that the SNT as it stands now is responding^{ing} to our expectations. So, let's revert back to that problem of how we are going to introduce the new international economic order. . .

LaQUE:

What I tried to point out was that nodule mining isn't a^{very} good tool for implementing a new world economic order. I am not against a new world economic order; I am just saying that there may be better ways to do it than through nodules.

HOVEYDA:

I didn't say that you were against.

NSG:

Louis, are you on this? You are right with us, and then Ambassador Engo again.

SOHN:

It is quite obvious from the discussion that there are two points of view in the first place, that some additional special problems which have to be met in some other ways. The two points of view are quite clear: one is that we would like to have free access to the resources of the seabed without any limit; and here even Mr. LaQue has suggested that the limit would be, of course, economical, that most of the countries are not going. . . most of the companies are not going to exploit more than they can sell, and that sales might be relatively limited. Therefore, but nevertheless, they are still talking in terms of unlimited exploitation. On the other hand, we have the developing countries which would like to have -- at least that's one theory -- they would like to have a complete authority. . . complete power in the authority to exploit or not exploit, the same way ^{as} a state, in its own territory decides ^{we}. We have some very nice mines but we don't want to exploit them at this time. And therefore, you have on one hand a demand for complete right of access; on the second hand, the right of shut off that access completely or limited.

The complicating factor that I mentioned is the problem of the fact that the metals contained in the nodules are in different proportions to the

demand of the market. There is, at this point, a very large demand still for copper, but the seabed production would only provide at most about one-and-a-half per cent of it. We have heard some figures today about demand about the nickel and here people say that the seabed contribution might be some 20 per cent. When it comes to the ~~copper~~ ^{cobalt} cupboard, however, we discover quickly that it might be more than 200 per cent of the present demand; and manganese but the sky is the limit, or the bottom of the sea is the limit. Anyway, as a result, we have fear by a number of ^{the} developing countries that their land-based production might suffer. I am told by my economist friends that the fear is not justified really with respect to copper, assuming that the data are correct. They are saying with respect to nickel, "of course it is going to affect, but here we have to remember that the main land producers of nickel are Canada, New Caledonia, and as New Caledonia may be considered either/France or a developing country, depending on which way you classify it, it shifts the figures considerably.

On the other hand, quite clearly, the producers of ^{cobalt} ~~copper~~ and manganese would suffer ^{would be} ~~with the~~ developing countries, though the figures ~~as~~ compared to the figures of production of copper and nickel are relatively small, and the amounts involved are

relatively small and could be taken care of perhaps by some other way.

Out of that, suggestions have been made, especially in the Secretariat -- the United Nations Secretariat reports -- that you can somehow proportion the number of areas of exploitation to the demand for nickel as being, kind of the crucial element, really, in the whole business. And then, having done that, then you deal with the other things some other way. And therefore you could think of a formula, assuming that the demand for nickel is going to increase by 3 to 6 per cent say that you will keep the middle figures that you are going to have a $4\frac{1}{2}$ per cent possibility of seabed production contributing to that; and if you are wrong, it's six, and that production can go six; if it's less than $4\frac{1}{2}$ then you would have to make some adjustments but your result would be won't give any new contracts.

Now, the next problem is how much do you really need for that? And here again, our economic friends ~~will~~ ^{dis} agree whether you need five areas, ten areas, how soon they would come into production, how large they are going to be? Deep sea ventures are talking about one million tons of nodules. Kennicott is talking about three, the Japanese are talking about three, and so on. And again, they

seem to think that they need an area of 40,000 square kilometres for the purpose. So, I think I would agree myself that if you start with the ten mining sites that the chairman has proposed in his draft that ought to probably take care for the moment of what is going on -- of the near future -- up, say, to the end of this century. But we have to build, somehow, into it a formula, an automatic formula that if we have made a mistake, if the developing countries develop much faster, and they need much more nickel and other minerals, then the formula can be properly adjusted. And I think therefore, we need (a)^a kind of a minimum guarantee that certain areas -- a certain amount of the areas would be given; second, a guarantee that it can be adjusted upwards, if necessary, if the demand increases. If the demand increases and it would not injure greatly other developing countries.

Now, there's the problem of access, and the problem of what people like to call "control of production," what really we are talking about is protection of the land-based producers. And again, a formula can be built, I think that economists and statisticians can build as a formula we would say that if the ^{domestic} land producers have suffered by X, then you can impose certain restrictions but not otherwise. Instead of saying the authority can

impose restrictions any time it thinks they ^{should} ~~can~~ be imposed.

The third point, I think, and crucial and both ambassadors ^{have} pointed ~~it~~ out, is the transfer of technology and how you accomplish it. The idea of having the enterprise was that the enterprise would itself try to acquire technology. Of course, enterprise is just an imaginary entity, ~~but~~ ^{it} would mean that they would have to hire people from various nations, and those persons are going to start acquiring managerial and technical capacity. It has been suggested to me (and I simply put that on the table) that it could be accomplished much easier without building new, great international structures by what we have already on land, nameiy, joint ventures with the developing countries. Nigeria might have the money even to participate in a joint venture with Kennicott or somebody on the bed of the sea; and part of the joint venture would be not simply sharing profits or sharing the minerals produced, but also sharing the technology. And here what comes in is that by having a limited number of sites to start with, you can in a way auction them to that company that offers the most generous terms for the transfer of technology to its partner from a developing country. At least that has been a suggestion that has been

made to me and I have not thought it through, I am not enough of an economist or a corporation lawyer to understand it; but I am putting it on the table as a possibility of something in between.

NSG:

Mr. Engo would you like to. . . . ^{then} ~~or~~ let Sidney. . .

ENGO:

I think I'll take the last question first, because the question of ^{the} a transfer of technology has been raised and ^{is of} ~~has~~ tremendous importance to the developing countries. In fact, as I said earlier, we have expressed quite rigidly the fact that the financial benefits are not all what we are interested in; there are other economic benefits. I have been told by the ^{experts.} economists that transfer of technology is an economic benefit in this context.

Now, first of all, I think the paper that has been submitted by, , that we are working on, at page 100 and the top of 101, also criticizes the fact that the text hasn't gone far enough. What it says here is that its national regime for the seabed beyond national jurisdiction provides for, and ~~I~~ [?] ~~said~~ assumes or permits the international seabed authority to exercise powers with respect to scientific research, transfer of technology, etc. I think to use the expression "permit," at this stage, or even [^] ~~assumes~~ ["] I think is watering down what the text says. The text ~~should use~~ ^{has used} the expression "shall." The authority shall ^{promote the} ~~transfer~~ ^{transfer}

technology. In each of these fields referred to there, you will find "shall" -- scientific research provided shall be carried out. The only permissive thing that one finds there is, for instance, under Scientific Research, that the authority may itself (this is a compromise) may itself do it. But everything else there is an imperative qualification to the instruction given there. It shall promote, it shall take necessary steps for promoting transfer of technology. So I think one should not look at the text as merely being passive in its approach. Again, beyond that, I wonder if one can spell out in a convention of this type what methods the authority can use to attain the transfer of technology. We don't know enough in this field; I don't think in a document like this, which will tend to be a declaration of very broad principles, which are ^{capable} typical of responding to various situations in the future, ^{you} ~~they~~ can, in fact, go into such highly technical questions in a convention. Maybe a technical commission, of course, which can advise the council on these types of matters; the economic planning commission -- we must remember that these are all part of the same body.

I listened with
 Now, ~~this would be of~~ considerable interest to what Professor Sohn has had to say today. ^{He thinks} ~~there~~

are two things that the authority itself can acquire technology, which it ~~then~~ ^{can} transfers to the young countries. I think this a long term affair. And as I mentioned in my introductory matter, I don't think that the authority is going to engage in that type of activity. The second one comes down to the, . I think, the compromise that is emerging, that will be joint ventures. Now, where is the technology going to pass in a joint venture? ~~The~~ Young countries feel, on the one hand, that it is possible for them to participate on the side of the authority in a joint venture arrangement. Now if the project is to be approved or undertaken the provisions for training programs -- and one mustn't forget that as of now, ~~any~~ ^{many} of our developing countries do have scientists who have been to the best universities in the developed world, but have no opportunity to use their knowledge. We have so many of these in my country; they have been relegated to teaching posts, or sometimes to the offices. We have a young man who is the Vice-Chancellor now of our university, for instance, who was awarded -- given an award in the United States for cancer research. He is able to preserve a cancer patient ~~patient~~ at some state for ten years, ^{a minimum of ten years}. He was awarded this. Now, he does not have opportunity for research. My country has done what

it can to give him scope for doing these things. But he is such a qualified man that you cannot appoint someone else as Vice-Chancellor over him, so he is a Vice-Chancellor; he is a man involved in all sorts of things. So these men are there. During the Nigerian civil strife you must have heard about the Nigerian atomic scientist who blew himself up running to go and blow up the federal palace hotel, then the biggest hotel in Nigeria, and he tripped over something, fell and the bomb blew him up. Now, to contain the fall-out (I don't know what you call it) ^{it} took the Nigerian government quite an effort. They had to call in experts from elsewhere. Now these young men exist, but they have no opportunities, so the authority is in a joint venture relationship with them, Kennicott that you mentioned. Then these young men can come on the side of the authority for this purpose. That is one way of looking at it.

It has also been mentioned, of course, the other suggestion is more interesting, I had never heard that one, that for instance, Kennicott can go into a joint venture arrangement with Nigeria to exploit the area. I can assure you that there would be an outcry in the developing world. Why Nigeria? Why not Cameroon? Why not Chad? Why not Iraq? Why not Chile? And, for all I know, there

are probably only about five of this consortia capable of exploiting at the moment; and they would have to divide all the developing countries up into five and take on the number. You know that we are about 108 now. So you need twenty in each of these, and how is it you are going to be able to work out a legal document in which the . . . Kennicott, for instance, or any of the others, would take 51 per cent of the shares and give only 40 to be shared, . I mean 49 to be shared, by the others. There are practical difficulties; but I think the best one would be what has been suggested, that the authority should enter into joint venture system and then enable the scientists of the trained personnel, either already trained or to be trained under the program as proposed here, to participate on the side of the authority.

Now, if I may, I'd like to touch upon what was mentioned earlier, to the effect that there appears to be a battle between those who are against production controls and those who believe . . . those who are for production controls in a sense that you respond to, I think ~~it~~^{is} Article 9, para. 1 (b) of the text, asking that adverse effects should be contained, should be avoided or minimized. These, of course, the developing countries interpret as an attempt to impose production controls. On the

other hand they believe that there should be free access to resources, and that the authority should, in fact, promote rather than do anything to limit production in the area.

Now, I think the fears of the young countries are not based on ^a mere sentimental wish to impose their will on anyone. It has been suggested that the best way to effect, to take care of these adverse effects would be . . . in general or global commodity arrangements. Now, the fact is, you are asking them to depend on something that does not exist. The existing arrangements, ^a ~~our~~ dialogue that has taken place ^{has} revealed attitudes on the part of the developed world that have not been very complimentary, ^{that have} ~~it has~~ not been very inspired towards this type of arrangements. So the young countries are faced with the absence of such commodity arrangements, and the possibility that these arrangements will not succeed because developed countries are going to insist on conditions which are advantageous to them and against the developing countries. The result is that that approach is not going to succeed. But I think that if, as I have suggested, ~~I think~~ that the authority should have some mechanism by which it can hear complaints from nations that are likely to be affected, not after the event, but including before the event; and

that some satisfactory arrangements can be worked out, then I think you would have had, at least, gone a long way to meeting the fears of the young countries. I do not believe that any young country (at least I have been in a group of 77 before I came to the chair) would like to see production restricted in such a way that it does not. . . there is no production at all. It is of interest to the developing countries that there should be exploitation of the resources; this is so, but not at any cost -- not at the expense of the progress. . . the new economic order that^{one} is looking for; and not in a way, for instance, dealing with the ~~mass~~ ^{licensing} system that gives advantage to one side and not to the other. This is the problem. It is not a sentimental problem; it is not a desire for the so-called irresponsible ~~the~~ majority trying to impose their will on the minority, there are real and concrete problems involved.

Now, the proposal for ten mining sites; I think Professor Sohn made reference to that and to the fact that it is possible, for instance, that the authority might give five of these out. At the moment the argument earlier is that probably to the end of this century we might only need five, given the knowledge that we have. I may increase. But then we are dealing with a situation now covering

a period of, say, twenty-five years. Now, it would be dangerous if during these 25 years only a small, an infinitesimal section of the international community is, in fact, involved in activities in the area; and once you establish that precedent it would be difficult some day for the authority to turn around and say we are going to reverse the situation. It is easier to say until the situation changes, or until there is a radical change in the situation, let us pursue a particular line of thought. We know what has happened with regard to policies under the United Nations charter. Even to change a word or a comma in the United Nations Charter when the structure or the nature of the situation in the international community has changed radically from 1945, has been almost impossible. The item ^{on} of a review of the Charter has been on the agenda of the Six th Committee for I don't know how many years; another chairman of the Six th Committee is with us here and we know what has happened. Of course, ^{we both} I have been in the chair of the Six th Committee, we know what has happened, that we very cleverly, carefully and politically decided to let people talk and we forget it; we have a veto over our head over that type of thing.

So I think realistically that the joint venture

system will cater for the problem that faces the international community with the demands on both sides. Today under ~~the~~ joint venture system you will find that most of the technological aspects and even the economic advantages would accrue to these companies that are investing. There is a determination on all sides; again, with the negotiations I can tell you this, that all sides would like to see profit made in order to get this thing going. In that way I think that cooperation can start together with the activities. Thank you.

NSG: Thank you, Ambassador. I have Mr. Holt, Mr. Haber and myself, and the clock. Mr. Holt.

HOLT: A brief observation and a question. The observation is that I must say in this context I find the discussion of transfer of technology highly theoretical. I think we are talking about the participation of the developing nations as a group, not individually, in the development of technology; because first the technology doesn't exist, it is far from adequate yet; as in the development, say, of the ~~crow~~^{kriel} fishery in the Antarctic. Secondly, I don't see to whom we are transferring, just as I don't see in the Antarctic that we are concerned to make sure, for example, that not only ~~the~~^a Japanese vessel and ~~the~~^a Russian vessel, but also a Nigerian vessel, ~~and~~ a Cameroon vessel, and so on, could all go to the Antarctic. We are not talking about that kind of

transfer. We are talking about development and participation of a part of the world, not a transfer to nations as such.

HOVEYDA (?)
~~PALMA (?)~~

I am sorry; transfer of technology in the jargon of the United Nations has a very definite meaning. . .

HOLT:

I realize that. . .

~~PALMA (?)~~
 HOVEYDA (?)

The meaning is very simple. Actually, a developing country who has to acquire technology has to pay royalties. That's the problem; the problem of transfer. . this, in the framework of. . . .

HOLT:

I understand; I still maintain that it is not the most crucial aspect in the development of new ~~techn.~~ . . of new activities; we are not here concerned with the transfer of existing technology.

However, my question is that I find it, in political terms, impossible to think about this unless I know where are the other resources; and some of the statistics that you didn't mention, Frank, were . . .how are distributed on land the proven sources of nickel, for example? How many of them? What proportion of those resources are in the developing countries? And is it, or is it not feasible to have any kind of an OPEC activity by those countries?

LaQUE:

You have. . . in the paper I gave you.

HOLT:

It's in here.

~~HOVEYDA (?)~~

Sohin

It shows Canada, out of 830 millions of pounds produces 610; Australia produces another 100, South

Africa 50, etc. From the others, New Caledonia produces 200. So Caledonia produces one-third of what Canada. . . and then the first other developing countries Indonesia with only 30; the Dominican Republic some question, whether it is 70 or less, and then there are few others. And now Guatemala is coming in and perhaps one or two others.

NSG: Bernie, you want to come in at this point?

HABER: In terms of the problem that has been discussed, namely, the kind of contract, basically centering about the issue of transfer of technology, it seems to me as though you have one other option that I haven't heard discussed that might be about the best mechanism you can use for transfer of technology^{and} to accomplish the purpose of the authority, and that is simply to again think about contracting for the development of a system for recovering these ^{modules!} nodules, and you contract from any of a number of companies to do this job. Therefore, in so doing you are in a position to (1) spread the technology by the device of having people from the developing nations participate in the project, wherever it is being performed; the authority retains complete control over the project. And in a project like this you are talking about a lot of people because it is a large project, and

Therefore, you can think of having a fair number of people from any of the developing countries participate in this as it is being developed; and you just pay for the development. So all I wanted to say, in effect, it seems to me as though you have lots of options. What should be done here is to try to retain the freedom to exercise these options as best you can. I don't see why you need to tie your hands down.

NSG: Thank you. Mr. Skoglund, and then me.

SKOGLUND: We have a committee for national resources in the U.N. in which the questions we have discussed today ^{is} ~~are~~ also discussed; and this committee has also proposed a revolving fund for national resources and, if I remember, it was on the initiative of some developing countries and Japan and The Netherlands; and the aim with this revolving fund is just the same as we have discussed it today -- the transfer of technology, and ^{so on} ~~son~~. And during the Seven th special session, the United States switched their attitude and expressed support for this arrangement; and last summer ~~some~~ mining experts, mineral experts met in Geneva and discussed rules and regulations for this endeavor. So when we are discussing the new international economic order, a question comes up again and again if we should separate the resources of the ocean from the other resources. Anyway, I would

like to see some kind of link in the future between the various UN activities.

NSG:

That would be very useful, Mr. Skoglund, and I think we ~~would~~ ^{will} be getting to that. . . some of these linkages in due course in our further discussions.

I want to interpose myself only to say two things: one that we will have to draw to a close shortly. I assume that transportation will be coming fairly soon.

But the other which is more important and substantive is this: the proposed seabed authority is a most precious innovation; it is the institutional concomitant of a major transformation of thinking about the resources of the world and the contextual order within which those resources will be exploited and managed and, of course, therefore, for whom? It would seem, therefore, particularly important to build into whatever arrangements are proposed for that remarkable, pioneering, and innovative institution, as many guarantees, or as many conditions as possible that will guarantee its health and its survival. And this is why we are talking about it, it seems to me. This is also -- again it would appear, the rationale or the context within which the section of the report we are discussing was prepared. That is, it was assumed that

any weakness in the organizational proposals for this remarkable entity ought to be perceived, ought to be examined, ought to be strengthened now, now; because it would be in the nature of a disaster -- if not an absolute disaster -- if this first attempt at developing a ^{supernational} body for the management of a major part of the world resources were to ~~f~~founder. So that whereas we tend in our discussion, understandably enough, to develop positions that seem to be associated with the particular interests of our countries, or our backgrounds naturally, and so forth, we share a common purpose in attempting to guarantee the vitality, the long-range vital functions of a really, the first institution of its kind probably that the world has ever seen. So, although I am sure that this has been in our minds all along, and I know it has been in Ambassador Hoveyda's mind, judging from remarks he made to me just before lunch and other conversations we've had, I wanted to close this session on that particular note. Because it also sets a model, if you like, for all of the kinds of discussions we've had -- yesterday, earlier today, and we will be going ^{on} to have tomorrow. This is too important a subject for us to let our, perhaps partisan instincts rise to the fore. In fact, I want to compliment every-

body for subduing those instincts in a most admirable way.

Elisabeth, it is a quarter to four. I think this is our time to close, more or less; it's raining outside, there'll be no tennis for anyone today, I am sorry to say; no swimming in the pool, and that's a great pity. But we will meet again this evening at Mrs. Borgese hotel and restaurant where the cuisine is truly remarkable Santa Barbara's best. Yes, four stars, yes; and tomorrow morning again we will reconvene and we will go on with the next section, I guess it's part 3, I forget these numbers -- Part 2, Section 3 is it not, in which we will focus on the navigation side of things, functions of IMCO, and so on.

EMB: Of course, we should have gone on for two more days.

NSG: We could have gone with this, you see, for a much longer.

ENGO: *they are* waiting for me in New York.

NSG: Thank you very much. Frank, thank you for that report.

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And whether, when you try to do something in one area, you don't cause trouble in another. I think there is especially attention between this chapter and the next one that deals with the environment; and when you start talking about, for instance, that perhaps some countries should be permitted to have less stringent regulations in certain areas then you start worrying how about that might affect the question of environment, pollution, and fishing; and to what extent you would permit, for instance, vessels that ^{have} much lower standards to be permitted to go to areas where they might endanger fishing or environment; and whether you can devise some methods of permitting certain types of vessels in only certain areas but not in others; and how. . . I once talked to one of my Brazilian friends and he says there is tremendous tension between the various departments of the government -- the shipping department now has gone very far in trying to buy as much shipping as possible, much of it sub-standard and therefore might have trouble to upgrade it; at the same time the department of environment is worried ^{with} that/all those ships start running up and down Brazilian coasts, many Brazilian beaches are going to be polluted -- and that, of course, is one of the great resources of Brazil. So you have, I think, that problem.

Second, of course, problem: assuming that you

know what you want to do, where you want to draw the line between those two great interests of the world community today is how you do it technically. And I think IMCO has been experimenting with various techniques, so have ICQA, IQAO, the aviation....

... . . I think that was pointed to us at first; and they, for instance, have adopted the theory, they adopted regulations and they are binding on everybody as of certain date unless a particular state says that certain articles or paragraphs or sections do not apply to them. However, if they do that, then other states can impose certain restrictions on that particular state with respect to their air planes, where they can come, etc. So you have this kind of tension between technical requirements on one hand, and safety requirements on the other hand, trying to take care of problems of various states. The people in Montreal that run the aviation organization are not too happy about those things; they say if we at least know what the changes from basic regulations are that are adopted by states and can notify other states about it, then it is for the other states to decide what consequences would apply. And, of course, in maritime law we discovered recently in the law of the sea conference one technique that is being applied, namely, every state can, of course, regulate access of vessels to their own ports. And as part of that access they

can impose certain conditions. And this kind of "port regulations," in the way of universal character because it applies to any vessel from any country coming to that port is one way to protect the coastal state without, however, preventing navigation on the outer reaches of the economic zone.

There are some problems, however, even with that, especially countries like Canada who are very sensitive about their marine environment don't want to have any exceptions whatsoever; they want, in fact, even more stringent regulations and the right to impose more stringent regulations than a maritime organization would be able to impose on all the members. We have really three problems that are somehow we are trying to solve together: one, less stringent regulations for certain types of vessels because of economic and equity considerations; medium regulations that try to apply to everybody as far as possible, with perhaps some minor exceptions; and third, the more stringent regulations in certain areas, especially areas like the Arctic where the environment is very fragile and how to try to get all those three things under one umbrella sometimes these are the difficulties.

NSG:

Thank you very much. Elisabeth, I think, Sidney Holt, Mr. van Ettinger.

EMB:

I have a number of brief observations. In the first place I, too, am immensely grateful to Tom and also to Ambassador Hoveyda for their remarks, which I think were very clarifying. WE did look at the problem in our paper (and I am looking at it now) from the point of view of a projection, let's say, a ten to twenty-five years range; and in that framework, it seems to me, that it will become increasingly difficult to separate the purely technical from the political and economic. I mean, there is this movement, a development of convergence between these things, and ^{we} they will not be able to separate them; and this, it seems, as well as the general mandate of the Sixth and Seventh Special Assemblies, will make it obligatory for IMCO to move more into the economic and political field than it has been so far. This, of course, has advantages and disadvantages. It will mean progress and it will cause new difficulties; there's no question about it. But it seems to me that if we are serious about building the new international economic order over the next quarter of a century this is one trend that cannot be resisted.

Of course, suggestions like the feature of this longer-range and more examples of what could be done rather than things that must be done today, obviously they must not; to a certain extent that applies also to the suggestion of licensing inter-

national shipping; although this would have very great advantages. And that leads me to a fundamental point: I think that on the whole the dichotomy between freedom and national sovereignty just simply doesn't work any more; these are not the alternatives. The workable alternatives are national regulations or international regulations; and licensing -- international licensing -- might get us around a lot of difficulties that might be caused by strict national regulations. It might be, as Professor Frick called it in Malta, "an international passport" for ships.

But one thing that I think we might address immediately because you have the mandate to create this new function and the relative structure there too, is the dispute settlement function of IMCO which IMCO is going to assume. Well, does it seem to you to be practical to have two dispute settlement procedures dealing with navigation -- one economic and one other aspect, technical and environmental, would it not be more, in the sense of streamlining, harmonizing the United Nations structure, to put these two things together and have one settlement dispute system for navigation? And would it not, at the same time, really give a great impulse to introducing the concept of the new international economic order and thus equity in shipping matters into IMCO? So that, I think, is short-range and

and immediate question.

Well, there are two more questions that I have: if IMCO moves as heavily into pollution in general, not only ship-borne pollution but pollution in general, what is going to be its relation to UNEP in this regard? Are they not running into some kind, again, of duplication of efforts?

And the last question that I wanted to raise is the one that Professor Sohn mentioned, and that is of double standards in this regard to pollution in developing countries. Of course we all realize the difficulties and also I do not, and have never belonged to those who are panic-stricken by these problems; I am not a doomsday foreteller. But the danger that I see in the double standards is of a different nature -- of a political nature. It seems to me that it encourages the migration of heavily polluting industries from the rich nations to the poor nations and that to me, seems to be related and one of the most insidious form of colonialism and I would be very careful about this matter from this angle. Thanks. Thank you. I call attention to the fact that we will have a coffee break soon. We started late; I suggest we go on for another five or six minutes, have our coffee break and then perhaps Tom will come back for responses or comments from you to the reactions. Sidney, you. . . .

NSG:

HOLT:

Two points I'd like to make, Norton; the first is that not knowing much about the functions of liner conferences, I do see that . . . it seems to me we have a general situation whether we look at the IMCO, the FAO, or the IOC sections, of established bodies outside the UN system, which are either maybe inter-governmental like many of the fishery bodies, or non-governmental such as the liner conferences which are in a way seats of the old economic order. And I think maybe the paper has not yet sufficiently examined the problems either of the bodies of the new economic which are more representative of the ideas of the new economic order, assuming some or all of the functions of those external bodies; or alternatively bringing those bodies into the orbit of the United Nations system. I think we have a general problem here, which I don't see clearly the way through, but it cuts across all the discussion of these elements of the UN system.

My second point is that I was going to ask a question about navigational services; and then it occurred to me that I am beginning to think that there is a major section of the paper which is entirely missing -- this is the provision, the international provision of technical services to maritime operations. Now we have scattered in the document reference to the international hydrographic organization, for example, but in a rather casual way, I may say -- I am not saying that too critically, but it doesn't feature. I

see no reference to the integrative global ocean station system which is a joint IOC-WOM activity. We know that hydrographic services -- and there are also the problems of weather services, ships' routines, rescue services, and things of this kind. To take hydrographic services as an example: these have been traditionally provided essentially by the British and French navies and then later the United States navy. Even the Russians use American and British charts, and so on. I don't know exactly what is happening in the United States but as part of the break-down of the colonial system and the power of those naval operations, and other factors are causing, if anything, a withdrawal of the provision of services. They are all tending to concentrate on their home countries. In any case, hydrographic surveying of developing countries is a second priority always; and the international hydrographic organization is a pretty weak organization. In addition, there are new requirements of hydrographic services of a more dynamic nature arising from new problems of larger ships even are creating a qualitative change in the needs for hydrographic services.

There is a serious problem of how one provides ocean data services in general; shipping is the main user, as always; although science and fishery are also users. And perhaps a general consideration of the technical services and their relation to a new economic. . .

a new structure in the world might be a supplementary study to be undertaken in the near future.

NSG:

I think those are very important points, Sidney; the first of them, I think goes back to Ambassador Hoveyda's constantly reminding us that we have to relate each particular facet of the discussion to the general structural characteristic of the United Nations and agency system, and also the MGO's as they function on the margins of that system.

Mr. van Ettinger would you care to come in at this point?

van ETTINGER:

Yes, Mr. Chairman, as a complete layman in these matters I only have a general observation to make. I hope it is a little bit of a fundamental nature. If I had listened carefully enough to Mr. Busha, I got the impression that he said that at a certain point it was a choice for equity or efficiency; and that seemed to resume a contradiction between the two matters. And I doubt whether that is the right way to see it. And the reason I comment upon it is that I hear this often in meetings of this kind. If we talk about efficiency the question becomes, of course, what yardstick do you use to measure efficiency? Is that the cost of a product or a service? I would suggest no; be it alone for the fact that that doesn't make a distinction between a local currency component and a foreign currency component. Is that a question of consumption of man-hours while producing the product or the service? I would suggest no; because a situation

of capital abundance is another situation, and a situation of capital scarcity. Or is the yardstick continuity of the enterprise? That may come nearer to it.

I would suggest that efficiency should take as a yardstick the measure to which more equity is brought about; and then there is no contradiction between the two any more. And that's why I said continuity of the enterprise might be nearer to it because I firmly believe that only if we can bring more equity about, then we can ensure the continuity of our planetary enterprise.

NSG:

Thank you; that's very helpful. Mr. Skoglund one more comment, then we'll break for coffee. Is that all right? And then, we'll return to this thereafter.

SKOGLUND:

Thank you. When we are going to implement the new international economic order it seems that shipping ^{an} is/especially difficult area. I don't know why; but I can see that countries -- Sweden and other countries have certain difficulties; and this is really the only area we have got various strong instructions -- six special sessions and seven special sessions to make reservations. So, for that reason I really like to support Ambassador Hoveyda that we should have some kind of input to these meetings which take place in two weeks from now about restructuring. We must have an input at the very early stage, otherwise we will be locked.

NSG: Mr. Skoglund, would it be indiscreet to ask what kinds of instructions you had in the general direction? You may not be able to respond to this, but. . .

SKOGLUND: Immediately when you touch shipping, it seems to be something that I don't know; and especially about the code of conduct -- liner conferences and. . .

NSG: All right; thank you very much. Shall we break for ten minutes instead of our previous fifteen and then we'll reconvene.

EMB: ? ?

NSG: surely are. . . I thought I would get some insight as to what.

* * * * *

NSG: We'll continue briefly with this fascinating discussion; I wish we could continue on it for a much longer period of time. And then we will shift to the next topic. Before asking Tom Busha to respond Frank LaQue would like just a word, and I think the word is well worth our attention. Frank.

LaQUE: Thank you. I hope the prediction of being worth the attention is justified; but it seems to me that listening to Mr. Busha as within IMCO there appears to be an evolution towards greater management activity relative to regulatory activity; whereas, it seems in the case of the seabed authority that the

management activity is at least dominant from the start without any reaching this goal through an evolutionary process. I don't say this is necessarily wrong, but this difference is quite evident; and its implications I leave for you to decide.

NSG:

Tom, may I turn this over to you now?

BUSHA:

Yes; very briefly, I think of. . . I'll start at the last speakers and if I may. The evolution to management activity is a very slow one, I am afraid, in IMCO and I rather wonder whether the dominant feature of the seabed authority . . . the management concept there won't have to wait for the outcome, the actual implementation and perhaps evolution of its own. But I entirely agree with Dr. LaQue.

The other point that was made, I think perhaps these three speakers wanted, I would say, to deal with this in real world terms and I can't emphasize how much that is a feature of this whole question I agree with. Somehow, and I hope this will come up in the later discussions today. We have to develop a strategy to carry forth some of these ideas into the actual negotiation of the law of the sea convention. But the point that I made two days ago and one I want to repeat is it would seem to me very unhappy to have the . . . to have this negotiation appear to be something that must come to a finite and recognizable conclusion rather as it

common in our experience at IMCO with the signing of a treaty without there being a very definite and far more comprehensive system for the ongoing consensus that I have spoken of several times, and which, in listening to Dr. Pardo, I think we all would agree is not something that the seabed authority, as is presently foreseen, would be taking on by any means, or capable of taking on. Getting through is a question of where the constituency is. We in IMCO, of course, are very aware of the environmental constituency but it is such a far-removed in a sense its voice is not always heard, as has been pointed out in this projection; for example, we have one organization "The Friends of the Earth" which represents the environmentalists in actual negotiation of IMCO conventions.

I wanted also to comment with approval of Mr. van Ettinger's comments. I think he is entirely right, that the efficiency question is the degree to which equity is carried out. I merely meant, and perhaps it was a little bit too paraphrastic that economists make a god of efficiency, and that we have in this area a need to take into account the continuity and development in the world of shipping without. . . it goes back to this other point that I have made. . . of having some form of law-making procedure which takes account of the realities and does not expect immediate solutions.

Dr. Holt's point about the question of services I think does warrant a good deal of expansion in the study. The point there is that IMCO is a place where . . . I mentioned earlier on that government involvement is very necessary to shipping: provision of canals, ports, lighthouses, charts -- but this is something which is figured into the history of the development of shipping, I should say. The Great Maritime power of the 19th century, the United Kingdom was the source of much of the charting of the world and indeed, at this time in England there is a considerable disquiet caused by the fact that the hydrographic services are suffering in the general economic frailty of the British government system, and they are unhappy about this. In fact, the IOC and IMCO have a long-standing collaboration on the question of ocean data acquisition systems which is one of the few areas in which we have got into this question of regulating, in that case, the legal status of these systems -- regulating some aspect of the services provided by governments for efficient navigation. I think this must be emphasized that it will be something to greatly expand in the future.

On the point. . . . there several points raised by you, Elisabeth, but I won't dwell on, because I know we want to get on and I haven't a great ^{have (?)} a great

deal to offer but I think that one of the problems that Mr. Sahovic pointed out in an earlier occasion -- the problem is that while we may think that the freedom of the seas is obsolescent, that sovereignty is dead -- they don't want to lie down; and we have (IN REPLY TO A COMMENT BY EMB "I'm sure that you didn't mean to imply it") the freedom to make a big grab, as we all have reason to know, but the question of whether states can do something about this in a-ten-to-twenty-five-projection is something I think ^{we} will be discussing later and I would be entirely in favor of attempting to do so.

Economic matters, I want to emphasize, in IMCO are . . . have been shunted aside in the sense that I mentioned earlier: we do not take up . . . we have not taken up the part of Article 1 of the IMCO convention which concerns the form of activity question of the marketplace economics of shipping; but I might say that that article has not been in any altered. There was no effort made to take out those provisions in the 1960s and early 1960s, many governments made it clear that they were not happy with them; they made declarations in accepting the convention that they would not expect IMCO to enter into economic matters. But those very states made no objection to the continuation of that provision; and it may well be that this can be the basis for a widening concern.

I don't, however, want to be thought of as in any way projecting the idea that IMCO should become some kind of either a nucleus of, or a central part of some large bureaucracy of the sea. That hasn't been my intention at all. It seems to me simply that it is an organization that may be used in the future in much the same as it is being used in the past. It was an effective arm for the sensible creation of standards of conduct in ocean uses.

As for the question of international standards and the level of the so-called double standard problem, really I don't feel that that will be a problem. But it is, as you say, not one to be panicked about; I feel that is an area in which I think the law of the sea will have to legislate and then we will deal with it after that.

In the final point in dealing with what Mr. Sahovic spoke of as supranational organization, I think we have to simply put aside the idea that states are, in 1976, more advanced in their desire to use instrumentalities of cooperation in a way that allows effectively a greater autonomy than they were in 1948. We see constantly in IMCO the degree that, in fact, appeals to sovereign rights and objection to anything that intrudes upon sovereignty is put before us at . . . on all occasions. There was a time, for example, when the Maritime Safety Committee was regarded in some senses as an

arm of decision-making very much like the IKO conference assembly; it's no longer the case. Whenever we meet -- and it's not only the developed countries, but developing countries as well -- protest that they must be . . . their wishes must be taken into consideration in the decision-making process at all levels and the sovereignty argument is very much alive.

NSG:

Mr. Chairman, I think that's all for the moment. Thank you very much. I don't like to cut this off but I think that our time-bind requires that we do it. Some of the general issues, some of the fundamental issues referred to by Mr. Sahavic, Mr. van Ettinger, Ambassador Hoveyda and others will continue to arise in connection with the next discussion; and of course, we will be addressing them this afternoon in a more pointed way. So that one mustn't think that we are simply letting these things go entirely by the board.

Under those circumstances, and perhaps we should check . . . shift to section 4 of part 2, it is on page 133 following. Here we focus particularly on the IOC (the Intergovernmental Oceanographic Commission) which operates within the framework of UNESCO, much as we focused on IMCO with regard to Section 3, and Sidney Holt has volunteered to . . . with a little arm-bending to take us strictly through the labyrinth of this problem. I think

we will see that some of these fundamental issues are recurring as we move along into this new area.

Sidney, thank you.

HOLT:

You sprung this on me because you know that I had my grubby little paw in the affairs of the IOC since its beginning, although I am perhaps not too familiar with the details of the developments in the last year or two. I have tried to keep up with it.

The IOC had a rather strange birth, as a matter of fact. The original proposal for the involvement of UNESCO in marine science in the late 1950s was, in fact, for the establishment of international research facilities; as is, in fact, the operation of research vessels flying United Nations flags, owned by UNESCO, to conduct research for the benefit particularly of the developing countries and the small industrial countries that could no longer afford the large scale of ocean research. However, during the negotiating process -- and I would say largely because there was no sense of unity among those countries at that time that wished to see such a facility, the proposals changed to the creation of a new international organization for facilitating cooperation in oceanographic research. But cooperation at the operational level, that is, the organization of international -- at what are called international cooperative research programs. Now such programs, such expeditions --

joint expeditions -- were a feature of scientific research in the north-east Atlantic for some years and they were generalized to little known areas not through the United Nations system originally, but through the International Council of Scientific Unions which organized a massive Indian Ocean expedition in the late 1950s. The IOC, as soon as it was established, took over the coordination of that expedition and is even now still engaged in publishing the proceedings, the scientific results of it. And for the first several years of its existence its only activity was the initiation, planning and coordination and then some follow-up of these cooperative expeditions. During the first ten years of its existence, from 1960 to 1970 there was a gradual increase in the number of developing countries that were members of the organization, but until late '60s it was dominated very strongly, as you might expect, by the big oceanographic powers, principally the overwhelming interest in having IOC came from the Soviet Union and the United States, which have always placed great weight on it as an organization to work with, perhaps because they were, and to a certain extent, still are the only states that conduct oceanographic research on a truly global scale. Even the Western European industrial powers and Japan, though they have massive ocean research programs tend to be pretty

strictly regionally limited.

In the late 1960s there was a move which was certainly associated with the moves in the United Nations initiated through Arvid's involvement; there was a move to broaden the activities and functions of the IOC; and eventually I went to be secretary for two years for the precise purpose of achieving that change of structure. The first was to involve the other UN agencies which had interest in ocean research, whose interests were not covered by the existing oceanographic commission. The original proposal was . . . which came from the United States was that the IOC should be detached completely from UNESCO and set up as a kind of mini-agency. And there were, in fact, many proposals of that kind, that it should be linked with the International Hydrographic Organization or be completely independent, and so on. This, however, was extremely strongly opposed by the Soviet Union which did, and still does, wish to keep the IOC tightly within the UNESCO structure. A number of reasons perhaps, particularly the fact that the Soviet Union feels that it has a very strong influence within UNESCO.

At the same time the membership of IOC was increased by greatly; although there has always been a problem of non-participatory membership of the inability of the developing countries truly to

participate in the projects that the IOC undertook. The links with the other agencies were finally achieved by agreement that changed the statutes of the IOC in, I think, 1969, which created a unique arrangement within the United Nations system of a joint secretariat with staff from about five agencies assigned to it, and with a mandate to serve all the agencies of the system. It is, however, . . . has led to extremely ambiguous situation in which the IOC is at one time a part of an agency, and in another sense is treated by its member states as an independent entity, with a consequent tension between the elected chairman of the IOC and an elected director-general of the UNESCO, and things of this kind. You can imagine that in a compromise solution of the kind that was adopted, although it has some advantages there are some rather difficult problems.

Another step that was taken which was interesting structurally was to put round the IOC a group, a constellation of scientific advisory bodies drawn from many quarters and representing the various interests in ocean research. Still, however, fishery research as such, is not included explicitly in the activities of the IOC and attempts to include it have failed, largely because, I think, within governments the structural affiliations of the research bodies concerned with fishery research and

food research and with, let's say, hard _____ and large-scale oceanography are quite different. Nowhere is this more remarkable than in the Soviet Union where one can, to an IOC session, always get many scientists and administrators drawn exclusively from the Academy of Sciences to other bodies from the Ministry of Fishing Industry, which is an equally powerful and science-oriented organization, and never ever is there any cross-over in these representations. This is true, however, of quite a large number of countries and represents, I think, still a serious and procedural block to the integration of scientific activities within the UN system.

At about the same time that some of these changes were occurring the nature of the activities of the IOC also began to change. The first change was the take-over of the world . . . the global data collection, data collation and retrieval processes and arrangements which were developed in the early '60s, again by non-governmental scientific organisations in connection with the International Geophysical Year. This led to the creation of world data centers which are located in Moscow and in Washington and these were gradually absorbed -- not absorbed into the IOC but their direction, their procedures were determined through the inter-governmental apparatus. This took place over a

period of four or five years.

At about the same time there began to be clear the need for science-based services for the collection of meteorological and oceanographic data in the ocean areas. This for two reasons: firstly, that for weather and climate prediction over land there is a need for an enormous increase in meteorological data from sea areas, particularly those not traversed by commercial shipping; and secondly, the increasing need for weather and climate prediction services in the ocean itself, relating both to the atmosphere and the water system.

This led to the development of a project called IGOSS (The Integrated Global Ocean Station System) ^{ive (?)} which evolved jointly with the World Meteorological Organization; and I would say, perhaps Tom is more familiar with recent situation, but this is probably a full third of the activities of the IOC are around the science-based service arrangements now. The other third, the other new third is the development of training activities, it having been recognized after a long gap that there was a need to have a massive training program to involve fully, despite their lack of physical facilities, the young scientists in the developing countries, from those countries that have now joined the IOC.

The creation of IGOSS led to the IOC's involvement with legal problems for a period at about the

time that the UN was beginning to busy itself again in the law of the sea. There are two quite separate legal questions -- not quite separate -- of a just slightly different nature. One is the status of what are called "ocean data acquisition systems" (ODAS) that is equipment in the ocean which are not recognized as vessels; this may be buoys, floating equipment of various kinds, which had no legal personality, no identity, not even a system of registration, marking, or anything; and the IOC began to work very intensively on this along with IMCO and other organizations, leading to a convention which I think again, Tom may correct me, is in abeyance now pending the outcome of the law of the sea discussions.

The second legal problem which was of a much more fundamental nature, related to the so-called freedom of scientific research - the whole question of the relation of the oceanographic powers with the coastal states, discussion of which first involved the IOC in an attempt to be an arbitrator, and intermediary between the powerful states and the coastal states. That again is completely in abeyance now as the law of the sea proceeds.

Just one or two more points: the IOC is now engaged very heavily in pollution research as a result of the movements through Stockholm, and so on, plus the seabed pollution questions which

were raised in Arvid's original statements in the General Assembly.

A fourth change which occurred in the early 1970's was the beginning of independence of . . . financial independence, or partial independence from UNESCO, and indeed, from the agencies as such. While I was there a trust fund was established and during that period, '70-'72, there was practically no money in it. Now I understand that nations and private bodies have subscribed to that trust fund to the extent that it possibly equals in amount. . . nearly equals in amount the UNESCO expenditures on the IOC through the inter-governmental apparatus. So it has a double funding, and, as you might imagine, this led to some very important discussions as to the criteria by which these funds, coming from various sources, some earmarked and some not, were to be expended with the inevitable discussions of the extent^{to}/which this should go to the formation of scientists in developing countries, and so on.

One last point perhaps to mention, that is, the regionalization which is referred to in Section 4; this has been much discussed within the IOC since the mid-1960s as cooperative investigations came to their conclusion. Now the cooperative investigations were always planned through inter-governmental committees with the participants being those who

intended to send ships to a certain area, and the coastal states in those areas -- not because they were coastal states but because they provided facilities -- port facilities -- or were interested in some particular way. There was no sort of rule that all coastal states had to be involved; although in practice the coastal state members always were.

Now inevitably, when the actual operations of ships came to a close and there was then a long period of continuing training, evaluation of results, trying to see what practical consequences the scientific results had, there were demands for continuing the regional apparatus. But these, in every case, with which I was associated -- and I think continues -- has got into the controversy as to whether the regional organization should say, for the Caribbean studies, should be an organization of the coastal states of the area, or of the participating states in the expedition. We had, for example, in the Caribbean the situation where at least half the work, probably much more than half, of the actual research investment/^{was by states} which were not coastal to the Caribbean particularly -- the Soviet Union, for example. And so far, though in each case there has been an attempt to create a standing regional organization, there have been no such organizations created; in some cases, the existing committees have been continued on an ad hoc

basis for a few years, but no standing organizations created.

That is about the state of the IOC. It is, in some ways, very strong; it serves the UN system as a whole; its membership has increased greatly, although still many members can't participate effectively. But it is in an extraordinarily ambiguous position with the UN system as being at once an organization and a non-organization.

NSG: Sidney, may I impose on you just once more before calling on Ambassador Pardo. On page 139 of the study report, there are a number...I think ten recommendations with which I am sure you are familiar. As you cast your eye again over these, do they -- just in your personal view, consist of an appropriate set of recommendations, out of your experience? I don't know whether you were a consultant particularly on this section of the report, you may have been.

HOLT: Not on the recommendations as such; no.

NSG: Perhaps this is another burden on you; but I thought it would be a useful guide to those of us who do not have your deep background, just to get your reaction to a number of these. . . to the sort of a collectivity.

HOLT: For a few minutes perhaps I could just mention something about each of them -- not in detail, if you would like.

NSG: I think that would be useful, myself. Would that

be all right with everybody to have Mr. Holt run down those. . .

HOLT:

Well the first one: relation to developing nations in membership, of course, I have referred to and this needs to be a continuing process; there is no real impediment to it. I should perhaps have mentioned that a nice thing about the statute is that it is open to all nations -- any nation of the UN system; it is not like the FAO body, it's not confined the members of UNESCO, which is quite important.

The question of staff is something I was deeply involved in and turned out to be extremely controversial. The fact is that UNESCO has a geographical allocation of staff in UNESCO as a whole; I was prohibited to apply that to the IOC separately. The question of an inter. . . of joint secretariat and secondments from other agencies led to imbalances in the geographic -- it was a mess. I think undoubtedly this is necessary, but it has not happened to the extent that the membership has embraced the developing nations. But certainly the recommendation is fully accepted.

Administration and financial detachment from UNESCO, I would say, yes, I still think that's right but if I were still with UNESCO I would be fired for saying so. This turned out to be an extremely bitter inter-agency battle and intra-agency battle.

The regional scientific centers I think undoubtedly should have that responsibility and I think that the establishment of an operational enterprise for non-regional activities would be a very desirable development. It is very much related to the things I was saying about FAO and the Antarctic food resource. I believe that it is essential. The only way I can see is an international scientific and operational body in that area. And the coordination, I think, is of the activities of the centers is natural and inevitable. I have mentioned something about ^{the} program of marine biology and fisheries: that, I think, is linked too. That would be easy to achieve if the detachment envisaged in recommendation two went through. In its present structure it's still not possible to achieve.

The question of registering and licensing research project is something that has been raised from time to time; it was raised, for example, in connection with the whole so-called freedom of research discussion. What is a legitimate research project? It happened to coincide with the revelation that certain oceanographic vessels were spying, and things of this kind, which made a rather hot debate. It did receive considerable opposition from states which are heavily engaged in oceanography on logistic grounds -- that the procedures of

licensing, and so on, would impede the development and flexibility of research programs. I believe that can be coped with by appropriate procedures and good telecommunication system, but it did receive opposition there.

I have not considered the dispute settlement proposals and I'd rather leave that to Arvid and Elisabeth to say something about' except that, as I said, the IOC did put one toe into that problem through its involvement as an intermediary between coastal states and oceanographic powers in a very tentative way.

The marine parks one - something should be involved in the UN system, and I think the IOC is the appropriate body; although, of course, it is UNEP that is involved in this question with IOC at present. However, I cannot see myself UNEP as an agency in the same constellation as the others. It does work through the other agencies, it has a very different nature; and I mentioned to some of you, some of the problems of policy determination and conflict in which . . . one of which involves me -- I am employed by FAO but paid by UNEP and FAO, and UNEP executive bodies, both in the UN system as diametrically opposed bodies with respect to whales. ?
UNEP is, I think, very engaged with the marine parks problem, I think it requires the involvement of an agency as such, and the IOC is obviously the more appropriate of these three.

NSG: Thank you. Your reference to the whale policy matter and yourself in the middle reminds me of the impossibility of doing the crawl and the breast stroke at the same time, which is probably what you are trying to do to swim out of these deep water.

?
HOLT: Having served as an FAO staff member in charge of a unit of UNESCO I am familiar with this sort of tight-rope walking. The whale is pretty simple stuff compared to. . .

NSG: This is really very helpful. I have Ambassador Pardo, Ambassador Engo. Arvid, do you want to come in at this time?

PARDO: Actually, I wanted to seek some clarification of the background of negotiations in Committee One with regard to scientific research and with regard to recommendations in the text here. The text assumes that IOC will continue and will become a basic organization within an integrative machinery for ocean space. But, in Committee One we have a number of provisions in the Single Negotiating Text which would suggest that possibly IOC is not expected to survive too long. Thus, for instance, in Part one of the Single Negotiating Text, article 22, one has "activities in the area shall be conducted directly by the authority." The word "activities" has been defined as including not merely activities of exploration-exploitation but also scientific research, and the words "scientific research" have

not been related to the seabed, but to scientific research in general. In other words, the whole field of IOC. Furthermore, Article 10 on Part One, also says "the authority shall be the center for harmonizing and coordinating scientific research." Now, here we have two possibilities: either that Committee One contemplates the integration of IOC in its entirety within the seabed authority, which is one possibility, then the articles would be consistent. Or else, the Committee One may have in mind that a center of . . . an international mechanism for scientific research should be created in competition with IOC. And here we would have two international mechanisms acting in competition, each claiming to be the center for scientific research at the international level. Which is the solution? What is the intention? I had a long footnote in my section in which I said I couldn't quite decide what was intended.

NSG: Ambassador Engo I think. . .

ENGO: I am glad that Ambassador Pardo raised this issue because this is the point which I wished to pose questions or make some suggestions. It comes out of the second proposal which is contained on page 139 whether IOC should be detached from UNESCO or not. I think whether UNESCO is being stubborn or not, whether there is, in spite of the inter-agency squabble that you have at the moment, that that

type of difficulty will be overtaken by events. A great deal would depend on what is going to happen with the law of the sea.. I hope all the nations of the world will, in fact, be party to the new convention.

Now, the type of choice that exists I think is twofold: either, on the one hand, IOC will adapt itself to the needs that have been created under the convention in such a way that it becomes attractive for the international organization to the new authority to adopt it as an agency, or to make use of it; and in which case you have a basic question whether it is possible to adapt IOC, given the type of attitudes which Dr. Holt explained between say, for instance, the USSR and the United States; whether in its present constitution it is possible to make adaptation of that type. That's a major question. And that, of course, is a matter which has to be resolved very quickly before the convention is concluded.

Now, the second alternative of course is the going attitude at the moment, that the conference is given no choice but to try to establish its own body, which I think would be a pity; but if it is necessary it will have to be, in order to take care of this type of broad ideas that are contemplated under the new convention.

IOC, as it exists at the moment, as it is

structured at the moment would appear not to be satisfactory, at least from the point of view of the developing countries. So, in the absence of getting that type of restructure, the attitude of the conference at the moment is that one has to establish a new agency at the appropriate moment, under the authority.

Now, to come to the point that has been raised: the first problem that faces the first part of the Single Negotiating Text, they will be asked to confine our recommendations -- at least I was asked to confine my recommendations -- to the mandate of the first committee. I believe that at an appropriate moment when the drafting committee is looking at the entire package, there will be some examination of the ideas that have come out of this first committee and out of the third committee inevitably. Now, the first committee at the moment can only talk about what happens in the international area -- that is the way I look at it. Now I think basically it is now being accepted that the authority itself is going to carry out -- not about to carry out scientific research on its own. I ventured to propose in Article 10 something which has not been discussed in great detail in that/^{first}committee; but in an attempt to harmonize what is happening in the first

with what is happening in the third, and under Article 10 that the authority should be the center for harmonization of scientific research; whether or not this is going to be accepted is still to be seen because there are attitudes that scientific research should be free on the one hand, and there should be no center for harmonization, except that that center could be an information receiving center -- a center that would, in fact, help young countries to get information and no more. Now, if we are able to break the ground that there ought to be scientific research by the authority on behalf of mankind as a whole, over what areas can it carry out this research? If it's only within the area of the jurisdiction of the authority, or could it extend research to the area of national jurisdiction of states? This is a fundamental question which has to be resolved. It is my hope, of course, I have expressed this quite often, that scientific research should be organized globally. I think there is far too much duplication; and mankind is not moving ahead fast enough to meet the dangers that face us at this time. So that it would be a good thing if we have a center for harmonizing research, as such globally, at least on matters of global interest. You are talking about the weather, for instance; and then the

problems posed by fisheries, for instance. This is not only in the mining area, but in the general field. They are of interest to mankind as a whole; and you cannot begin to create territories for research in this field.

So I would think -- I can mention that my attitude personally -- is that the authority will, in fact, be able to create an institution independent of IOC as long as IOC continues to be structured the way it is at the moment. But I sincerely hope that after negotiations have advanced and that the superpowers, at least the Soviet Union that's a little nervous about the situation at the moment, begin to find that there is no harm being done to their national aspirations, I sincerely hope also that they become convinced that there is greater freedom of research in the collectivity of the authority, then we might find that rather than dissolve IOC one may re-structure IOC to meet the particular needs of the new situation.

NSG: Would you mind ceding to Mr. Pardo, ^{just for a moment,} /Ambassador Hoveyda and then we'll come back to you.

PARDO: Incidentally, I have no objection at all; in fact, my personal feeling I must say, is rather I'd like to see IOC integrated into the seabed authority. An alternative could be the alternative

suggested in the text, that is to say, confederation of international organizations in integrative machinery, in which the IOC would maintain its status and would be linked to other organizations. These are two alternatives, both can be supported; but what I would hate to see would be two competing international organizations in the same field. This would be a disaster because already the United Nations is in an awful mess with competing and varying priorities of various organizations. I don't think there is a single delegate to the UN that can make head or tail of the entire system, and how it works. And this would complicate this even more. So I don't mind which alternative is adopted but let us have some solution to this.

NSG:

Paul, and then Ambassador Hoveyda.

ENGO:

I think what we tend to forget in the UN system is that the members of each of these specialized agencies are also members of each of these bodies. We have a problem in each of our countries, I think we are trying to regulate this in Cameroon, for instance, and what the left hand is doing the right hand does not know; and you have duplication as a result. You really have to have a re-examination of the structure of the international system.

I believe that if IOC stands as it is, you are going to have opposition from the developing countries undoubtedly, because they are not adequately represented; they are not participating in the programs of IOC, and so on; they should be brought into that stream of things. But I think that if there is resistance in the IOC, I can foresee that the new. . . if a new agency is established it is going to wipe out IOC. Now there will be no case whatsoever for the Soviet Union and the United States belonging to these two groups. They will be the first to see the wasteful aspects of the duplication involved. One can only hope that in these discussions people will begin to realize what is involved and attitudes will begin to change as assurances come through the negotiations. But as far as competition is concerned I am entirely in agreement with Dr. Pardo that they cannot.

NSG:

Ambassador Hoveyda, thank you for your patience.

HOVEYDA:

I think that Ambassador Engo is very optimistic when he thinks that when the superpowers come into two organizations they would understand and choose one of them. They have the same problems as your country and my country; their left hand is unaware of what their right hand is doing. I am very, very glad about the. . . discussion and the remarks made by Sidney Holt because we are now in the heart of

the matter. We see how things are overlapping, how duplications exist and we see what is the disease of the whole system of the specialized agencies. That disease is, I submit, the bloating of UNESCO and FAO. These are the two super-agencies in the family.

NSG:

UNESCO and . . . ?

HOVEYDA:

. . .and FAO;and their staff are the people who are giving us the more headaches in each discussion we have either officially or unofficially. And I had myself to spend, since I left the international secretariat, a lot of time in order to avoid clashes between the director-general of UNESCO and the director-general of FAO. So, the more we can take of their activities and put them under another authority, the sooner and the better we can establish some sort of equilibrium inside the whole system of the United Nations. I, for one, advocate with my government every time such a thing happens that we should go along with the idea of _____ and this would be the solution to the problem we raised. We can take very easily the IOC from UNESCO and once the authority is created put it there. And that would solve many of the problems. The same in the IOC when you are proposing things here, it appears immediately that you are going to create new areas of duplication. For example, about fisheries: what

would happen to the COF? And how the COF is going to - - -knowing the director-general. . . . a certain general (I am not naming one person) of FAO -- I know that FAO would refuse to abandon its competence in this field, and we will find ourselves again in trouble. So, if you allow me, I want to make some general remarks -- first of all a general remark and if it's late, I will return on the details later.

My general remark is that we are approaching something new and wonderful which is the domain of the oceans in relation with the future of humanity with narrow minds, with the views of the past. This applies both the restructuration of the whole system of the United Nations and international organizations, and to the states. Their international system is looking at this problem in order to see how much they can get of it in. . . . under their umbrella, to gain more authority. And this would create, if we don't take care of it in the framework of the conference, this would create later terrible problems between the authority and the agencies, and the place of the authority in the whole system of international organizations. So we have to take that. We have to oppose this way of the agencies of looking at the problem as if it was a big cake and everyone should take. But this applies to the states, too.

Right from the beginning, after I listened to Ambassador Pardo, because I was latterly a delegate to my government's delegation, I threw up this thing in the foreign ministry, and as years were passing since that proposal I saw that states were also acting as if a new cake had been put on the table. And this reminded me of something -- a novel I mentioned to Professor Ginsburg, I want very, very quickly to explain what it is: this was an English writer, R.C. Sheriff, who was writing dramas more than novels and film scripts, and who died a month or two ago. Among his novels, one is called The Hopkins Manuscript and it is intended to be a sort of science fiction to criticize the British way of looking at things. I might add that it was published around 1937 or '38. It supposes that the moon, for some unknown reasons, falls in the Atlantic one day; and all of a sudden, all of the industrial countries, including the United States, Canada and all the others begin a big fight about how to distribute the resources of the moon among themselves. And the disputes go very, very far and while they are disputing this -- it took, I think, a century -- during that century when the disputes were not solved and Asian movement began and ran towards Europe and destroyed the whole Western civilization. And the book is

set in the year 3000 when Ethiopia is the most advanced country in the world and in the museums of Ethiopia they try to reconstitute the last history of humanity and the only things they have are stones; for example, one which says that a certain Caesar took over all Europe and the British Isles; another, found near in the British Isles which says 'Pelham three miles,' and nobody understands what is meaning there to it. And they try to find out what happened, and to the date they find in a thermos bottle this Hopkins Manuscript that Mr. Hopkins, a very, very normal Englishman had noted everything down and put it in a thermos bottle that how they understood that the moon had fallen down because they didn't know that there was a moon.

Really I was reminded of this at the beginning of the conference on the law of the sea.

What we need, if we are speaking of a new international economic order in relation with this, we have also to have new attitudes. This is not a cake. I understand that the superpowers want to have the greatest share, I understand that the land-locked parties want to have a share. We have to define, first of all, how much for each individual on this earth and then, accordingly, go along. We cannot continue this way; and I am very

to bring this, but I think that this is basic. I know that neither the states, nor the individuals, nor the organizations are going to change overnight. Maybe they would never change, as some advocate that it is impossible to change human nature; but nevertheless, having in mind this idea that the problem should not be looked at as a cake, maybe we can advance more normally. And certainly if we cannot give lessons to government, we can give lessons to international organizations at least and avoid part of the difficulties. This is the general remark that I wanted to make, and if you allow me . . . if you want to break now, I would say a few more remarks about some detailed problems.

NSG:

Thank you, Mr. Ambassador; we appreciate those things very much. Let me ask the group how you feel about breaking now. We do have Mr. LaQue, Mrs. Borgese, Mr. Holt and, of course, you wish to add some further remarks, and Professor Sohn. But if we are having a hot lunch that creates some burdens on the cook, you see. We are already fifteen minutes late, you understand. On the other hand I don't want. . . we don't to risk cutting off a discussion of very fundamental significance.

The discussion seems to be getting us into the afternoon agenda, Elisabeth; does that sound reasonable to you?

EMB: What I have to say certainly belongs to the
afternoon discussion in a way; although it takes
directly.

NSG: Well, Frank, would you. . . .

LaQUE: I'll be content to wait until. . . .

NSG: . . . wait until. . . let Elisabeth have the last
word at this point, unless. . . .

EMB: I'll wait. . . .

NSG: Oh, you are content to wait. . . well, then, let
us break, let us reconvene really quite promptly
at one-thirty. We have a big agenda for the
afternoon; I am not entirely sure what it all
involves, but it certainly involves the questions
that are on the table here. So until one-thirty,
then, let's have a break.

E N D O F M O R N I N G
S E S S I O N