



Pacem in Maribus

# ACROSS THE OCEANS

The I.O.I. Newsletter

Volume 2

Issues 1, 2

January, July 1983



Twelve months have passed since the last issue of Across the Oceans. Twelve incredibly busy months! From October to December last year, the first Class C course was held in Goa, India. While this was taking place on one side of the world, on the other side -- in Mexico City -- delegates were meeting at the annual IOI convocation, Pacem in Maribus. In March of this year, the fourth Class A opened in Malta. At the end of May, the second Class C began in Fiji. And in June, the fourth Class B course kicked off in Canada at Dalhousie University.

In addition to all these 'current' activi-

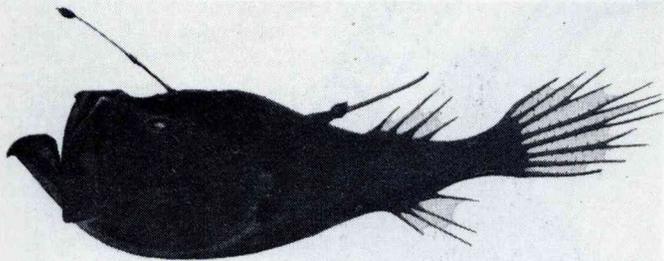
ties, we have also been busy making preparations for future happenings. The twelfth Pacem in Maribus convocation will take place in Colombo, Sri Lanka, from 25-28 October. The third Class C course will be held in Algeria from October to December. And then, just three months later, the 1984 courses will begin, starting off with Class A in Malta in the Spring.

Unfortunately, all this activity has caused the IOI Newsletter to fall behind schedule. And so this double issue is meant to bring everyone up to date. Of course the Newsletter would not be possible without the assistance of all those who

have taken part in, or been associated with the IOI Training Programme. At this time the number of IOI Training Programme alumni has reached 176, representing 58 Third World nations. That is quite a big group to keep up contact with but hopefully, Across the Oceans will help us all to do just that.

The Newsletter developed at the suggestion of IOI participants. And it depends on input from everyone. Please keep us all informed on the latest ocean management developments in your countries and regions. Submissions for the next issue should be received by December of this year.

All correspondence should be sent to the International Ocean Institute, P.O. Box 524, Valletta, Malta.



## NEWS FROM PARTICIPANTS

It is good to be able to report that the past IOI participants are indeed making a valuable contribution to this Newsletter. Since the last issue, two substantial pieces have been received on matters of national or regional marine affairs.

The first comes from ALEKSANDER "SANDY" CIRCEROV, the Yugoslav participant on the 1982 Class B course. He sent this note about offshore exploration in the Adriatic.

### OIL PROSPECTING IN THE ADRIATIC

In introducing the subject of oil and gas production, one should know that Yugoslavia is the fifth largest producer of oil and natural gas in Europe. This year [1983] it expects to produce 4.3 million tons of crude oil and 2 billion Nm<sup>3</sup> of natural gas.

The Yugoslav territory is on the whole inadequately prospected for oil and gas. The same is true for the seabed and subsoil of the Adriatic Sea. There are many guesses and speculations.

The search for the "black gold" did not start this year. The INA-Naftalpin Company,

Yugoslavia's largest oil firm, carried out an extensive seismological survey in the Northern Adriatic in 1968. This company started to drill near Ravni Kotari, Rovinj, Vis, Olib, Krk, Pulj, Dugi Otok, etc. In 1981 INA-Naftaplin sent documentation on the Adriatic seabed rocks to thirty leading oil prospecting companies in the world. In early March agreements were signed with the four companies which offered the most favourable conditions. These companies are Chevron Overseas Inc., Texaco International Exploration Company, AGIP SpA of Italy, and Hispano oil of Spain.

Under the agreement, the prospecting will last four and a half years. If commercial deposits are discovered, the partners will jointly invest in the production and the exploitation will start in three more years, at the latest.

We hope that the venture will be successful!

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Sandy also asked that all participants of the IOI Training Programmes be informed that he is preparing an article on the legal status of offshore mobile craft and would appreciate receiving information on national legislation dealing with the definition and legal status of floating, semi-submersible, submersible, and jack-up structures.



Also from the Mediterranean and also from a participant on the 1982 Class B course, ALDO CHIRCOP, submitted this article on a central Mediterranean delimitation case.

#### MALTA/LIBYA CONTINENTAL SHELF DISPUTE

In what may prove to be an important continental shelf delimitation case, the Republic of Malta/Libyan Arab Jamahiriya continental shelf dispute is now in the written pleadings stage before the International Court of Justice (ICJ).

Malta, a small Island State, and Libya, a large continental State, have been locked in a dispute over the median shelf boundary between them in the central Mediterranean, for the past decade. A 1976 Special Agreement referring the dispute to the judicial settlement became operative only in 1982. In the summer of that year the two States finally jointly notified the Registrar of the ICJ and the dispute is now on the way towards a judicial settlement.

Nine months after notification, Malta and Libya submitted to the ICJ and exchanged between themselves written memorials. This took place in April 1983. Replies were submitted and exchanged four months later. Further pleadings could be submitted at the request of either party or at the instance of the ICJ. Oral hearings mark the close of the pleadings' stage.

According to the Special Agreement, the ICJ has to decide "What principles and rules of international law are applicable to the delimitation of the area of the continental shelf which appertains to the Republic of Malta and the area of the continental shelf which appertains to the Libyan Arab Republic, and how in practice such principles and rules can be applied by the two Parties in this particular case in order that they may without difficulty delimit such areas by agreement...." Once the ICJ renders its decision, the Parties will have to negotiate the shelf boundary treaty in accordance with the judgement.

Current delimitation law favours an equitable solution after taking into account all the relevant circumstances of the case, without stipulating any rigid rules. Regarding delimitation methods, Malta and Libya have behaved differently in the past. Malta, a 1958 Geneva Continental



Shelf Convention party, has consistently argued for equidistant shelf boundaries. Libya, on the other hand, has favoured coastline proportionality to shelf. Consequently, for the first time, the ICJ may be called upon to consider equidistance and coastline proportionality in the context of opposite States. Further, because of its relevant position, the Gulf of Sirte (Sidra) may be considered. If this happens, naval powers will be interested to see what legal considerations will be given to the controversial gulf, over which Libya claims a historic bay regime.

Obviously, the eyes of neighbouring Mediterranean States will be on the outcome of the case, but probably, States that are confronted by, or are themselves Island States, will also be interested. It will be interesting to see how the ICJ will treat Island States, as distinct from other islands.

The ICJ will also be faced with its own 'obiter dicta'. Although the ICJ was faced by adjacent States in the North Sea Continental Shelf Case 1969 and the Tunisia/Libya Case Concerning the Continental Shelf 1982, it hinted at the possibility of an equidistant boundary being less inequitable between opposite States than in the case of adjacent States. But the ICJ may always highlight particular circumstances that justify a different solution, as it has already done in other cases.

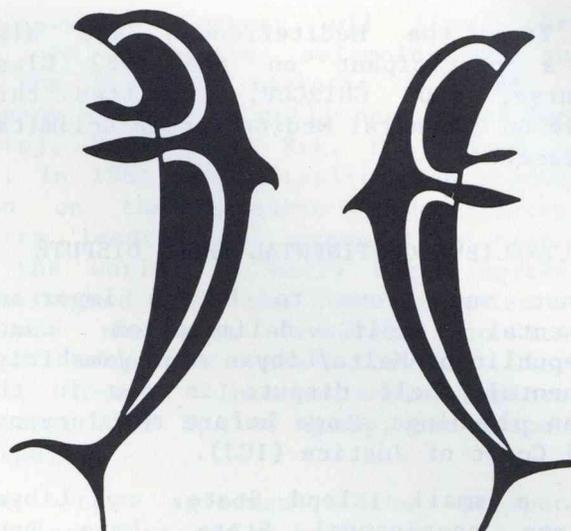
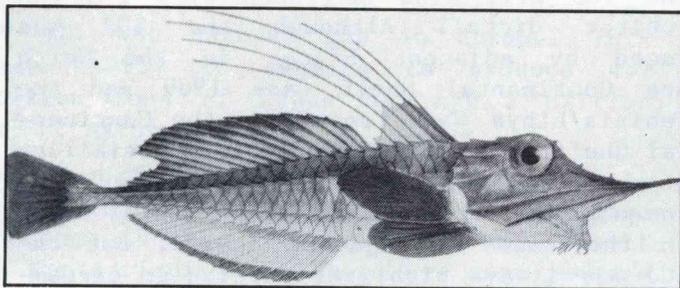
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Two participants from the 1981 courses wrote about what they are doing now. The first came from Mr. MOHAMMAD SAEED AKHTAR of Pakistan (Class A-81). His letter reads:

"...I am currently a member of the Government of Pakistan's Working Group on Natural Resources, which has been set up to recommend measures for development of natural resources during Pakistan's Sixth Five Year Development Plan for the period 1983-88. My contribution being in the field of marine mineral resources. Also, I am currently engaged in the preparation of a training manual on marine resources management for providing government functionaries an insight into the role and development of the marine sector. And, further, I shall shortly be embarking on an assignment involving the development of selected coastal areas as tourist resorts."

From Tanzania, MRS. JANET S. URONU (Class B-81) passed on news of how attending the Training Programme had had a direct effect. She writes:

"...I have been very busy in trying to put into practice the knowledge I gained during the course in developing and managing my country's marine resources. With advice from Dr. John Armstrong of S. Carolina Sea Grant Consortium (he was one of our lecturers at the Halifax course) we have managed to reach a satisfactory progress in conserving some of our rare marine species. In fact, I have found the knowledge I gained at Halifax to be very useful in daily performance. I...am greatly thankful for all your endeavours in bringing us (developing countries) together."



And finally, DR. AGAMEMNON XENOPHONTOS, the Cypriot participant on this year's Ocean Mining course (Class A-83) had these words about the Programme:

"These...ten weeks were an ambitious journey in search of specialised knowledge, full of different kinds of experiences. We were given the opportunity of acquiring some very useful tools; tools that are necessary for contributing to the successful implementation and realisation of noble goals that find their origin in the body and spirit of the Convention on the Law of the Sea. We are well aware of such privilege and we have taken full advantage of what we received. We pray that the day is not far when we will be called upon to use them. Perhaps then the lecturers, the organisers, and the contributors to the success of this course will be proud of us."





Class A Participants visiting Malta's Grand Harbour  
(Vanderbilt)

## OCEAN MINING - 1983

The Spring of this year was the season for the fourth IOI Class A course on Ocean Mining. Twelve participants from eight developing countries gathered in Malta this March to begin their examination of the many facets of this new field. As in the past, the first five weeks were devoted to the legal and economic aspects of mineral exploration and exploitation.

The course kicked off with an Inaugural Session at the beautiful Mediterranean Conference Centre in Valletta, the former hospital of the Knights of St. John. Dr. Mario Ruivo of the Intergovernmental Oceanographic Commission of UNESCO gave the Keynote Address in which he discussed the continuous advances in science and technology and their effects on international cooperation.

Once again, Dr. Reynaldo Galindo Pohl took the responsibility of guiding the participants through the intensive weeks to come.

The lecturers were drawn from near and far. Many were old friends to the Ocean Mining course, like Marc Lador of Petroconsultants in Geneva, P. Kirthisingha of UNCTAD, and Carol Williams of Cambridge University.

The participants also had the opportunity of meeting a few lecturers new to the IOI course. The Ocean Economics and Technology Branch of the UN Secretariat sent Larry Newman and Sui Ying Wat. The Yugoslav International Centre for Public Enterprises sent Praxy Fernandes and Bogdan Kavcic. And Ambassador Zvonko Perišić, Deputy

Chairman of the Yugoslav delegation to UNCLOS, was also there. One of the most popular lecturers this year was a good friend of the Class B courses, Prof. Robert Meagher of the Fletcher School of Law and Diplomacy.

As in the past years, the fifth week in Malta was devoted to a simulation exercise. This year, it was once again a great success, and for the first time on the Ocean Mining course, the participants reached agreement on all issues.

With everyone celebrating this success, the group boarded the Air Malta plane and traveled on to Aachen, W. Germany to complete the second half of the course under the guidance of the FIZ (Institute for International Technical and Economic Cooperation).

The participants had barely the chance to settle into the Hotel Baccara when once again they were plunged into an in depth examination of the scientific and technological aspects of deep seabed mining.

The first three weeks included such topics as heavy mineral placers, manganese nodules, hydrocarbons, and a short but intensive course on the practical and theoretical techniques of pyro- and hydrometallurgy.

Visits were also made to the Jülich Nuclear Research Centre, the Rheinische Braunkohlenwerke AG and its Fortuna-Garsdorf open cast mine, and to the coal mine Pit Anna, Baesweiler.

In the fourth week the participants journeyed to Hannover and Hamburg. In Hannover, the Germany mining company Preussag AG was the host. Here they had discussions



Dr. Blissenbach, Dr. Galindo Pohl, M.C. Sammut, and Class A participants at Preussag headquarters

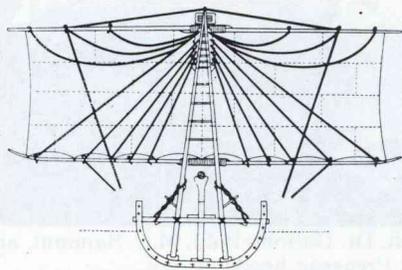
with the Preussag personnel about the research activities of the Marine Technology Department including their manganese nodule mining project, their phosphorite nodule project, and their metalliferous mud project in the Red Sea. They also visited the Preussag chemical and geological laboratories at Berkhöpen, as well as the Federal Institute for Geosciences and Raw Materials and the Clausthal Technical University in the Harz Mountains.

Following this the participants traveled to Hannover where they were hosted by the Institute of Hydrobiology and Fisheries Research of the Hamburg University. Here the group looked into the environmental aspects of ocean mining.

Without doubt, the highlight of the Hamburg trip, and perhaps of the entire Ocean Mining course, was the cruise on the RV Valdivia. In previous years the participants had been taken on board and shown round this famous research vessel while it was in Hamburg harbour. This year, the group was able to enjoy a full day cruise to the North Sea, courtesy of the University of Hamburg's Institute of Hydrobiology and Fisheries Research, as well as RF Reedereigenschaft Forschungsschiffahrt GmbH, the management company of the Valdivia.

After a bus drive to the port of Cruxhaven, the participants boarded the Valdivia and headed into the North Sea to its first station approximately 40 km in the German Bight. Here samples of sediment and benthic fauna were taken, using a heavy box grab which had been specially designed for deep sea use.

The participants were given a demonstration of plankton sampling by the use of a multiple opening and closing net system, which had been used by the Hamburg group in the Red Sea Programme. Also at this station, light intensity and light attenuation at a depth profile were measured, using a quantum scalar irradiance meter.



During the second part of the cruise, which took place at a transect at light ship ELBE I upstream the Elbe estuary, water samples were taken to measure the influence of water discharged by the Elbe river into the German Bight.

Two types of multisonde equipment were used to measure temperature, salinity, and oxygen. Sampling of water by a multi-sampling array system connected to the multisonde were also demonstrated, together with other types of samplers.



Class A Participants at Preussag A.G.

At each station, water samples were taken in order to analyse and ascertain the presence of heavy metals and organic trace constituents. Active inorganic mercury was measured on board Valdivia, and the results were 1.4 to 2.2 ng/l, increasing as the sites drew nearer to shore. Further analysis of the water samples were to be carried out later on at the University of Hamburg.

All the equipment which had been purchased for the Institute's Red Sea study programme was tested during this cruise.

There were several other field trips on this year's Ocean Mining course, like a tour of the port and harbour facilities of the Grand Harbour in Malta, a visit to the largest reverse osmosis plant in the world which is located at Ghar Lapsi in Malta, and a short tour of the Emsland Natural Gas Fields on the trip from Hamburg back to Aachen. But the participants were unanimous in their feeling that the Valdivia cruise was the most stimulating event during the course.



All too soon the tenth and final week of the course arrived. The first part of this week was spent completing, revising, and polishing the Final Report which would be presented on the last day at a symposium entitled "Ocean Mining '83".

The Report was designed and written entirely by the Class A participants. It covered all the aspects of ocean mining which had been dealt with in the preceding ten weeks. This included chapters on the origin and distribution of mineral resources, an analysis of marine mineral resource technology, discussions on the effects of seabed mining related pollution and methods for its prevention and clean-up, and a short reference to energy resources of the sea aside from oil and gas, e.g. wind, tides, currents, etc. The Report also dealt with the economic aspects of deep seabed mineral exploitation and concluded with a discussion of the Common Heritage concept and its relation to the Seabed Authority's role in the mining of the international area.

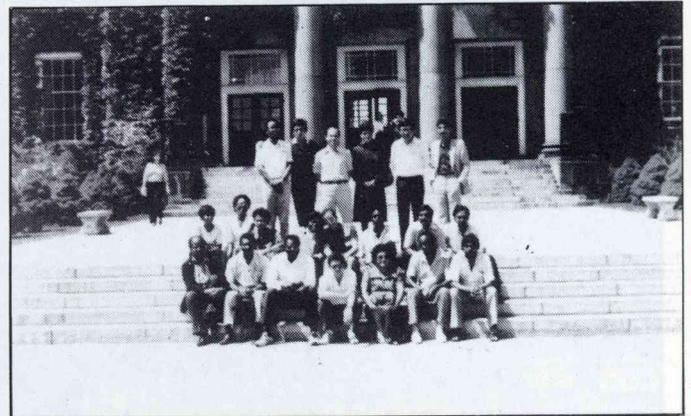
The Report was presented at the "Ocean Mining '83" symposium to a group of experts from the Aachen Technical University who had assisted on the Aachen portion of the Training Programme. Invited experts who came from outside Aachen were Prof. Ludwig Karbe of Hamburg University, Mr. P. Kirthisingha of UNCTAD, Dr. Renate Platzöder of the Foundation for Science and Politics in Ebenhausen, and Dr. Peter Winter of the Clausthal Technical University. The morning portion of the Symposium concentrated on the question of whether, in view of the economic recession, research on the mining of manganese nodules should be continued. In the afternoon each of the invited experts delivered brief statements on the Participants' Report and a lively discussion followed.

And so, after ten weeks of hard work, the 1983 Class A course on Ocean Mining came to a close. The participants packed their bags, boarded their jets, and returned to their respective countries to begin to put to use the knowledge and experience gained throughout the course.

"It is my opinion that the IOI [Class B-82] was a very productive one, especially for those among us (mid-career professionals) who are going to take the responsibility in the implementation of the new International Convention on the Law of the Sea."

Aleksander Cicerov

YUGOSLAVIA

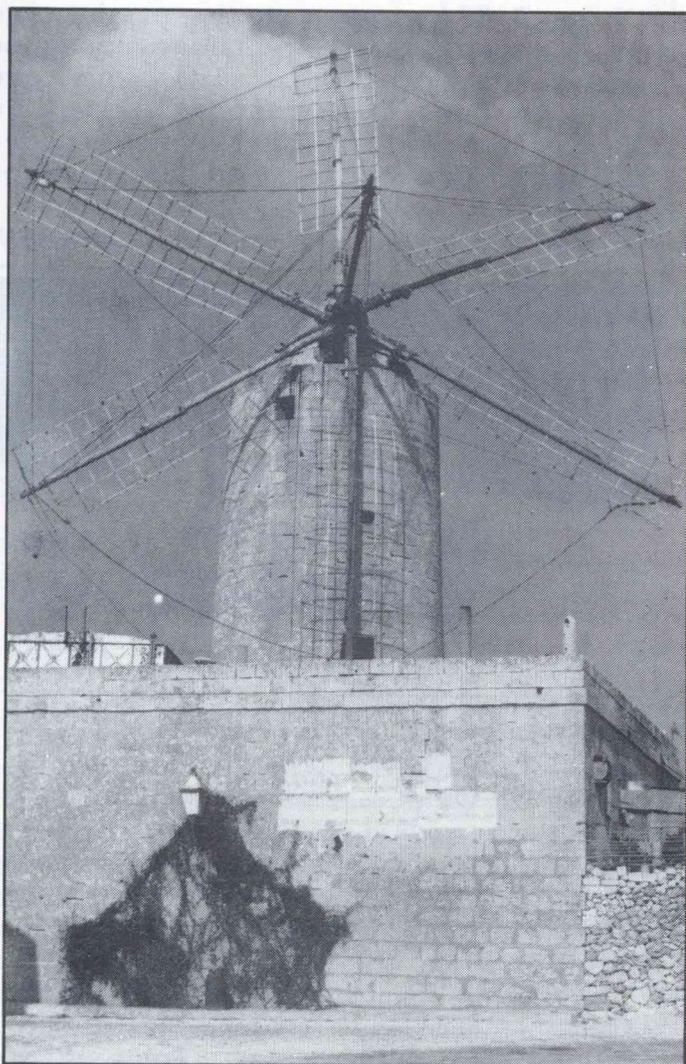


Class B Participants at Dalhousie University

## EEZ MANAGEMENT - 1983

This Summer saw the successful completion of the fourth IOI EEZ Management course, the third to be held at Dalhousie University in Nova Scotia, Canada. The participants on this course numbered 22 and came from 17 developing countries, namely the British Virgin Islands, Colombia, Costa Rica, Egypt, India, Indonesia, Iran, Kenya, Mexico, Sierra Leone, Somalia, Sri Lanka, Tanzania, Thailand, Trinidad and Tobago, Turkey, and Yugoslavia. Also included on this course were two Observers from developed countries: Switzerland and the USA. The Course Director this year was Ambassador Tommy Koh, President of the 3rd UNCLOS.

The Course opened on the morning of the 13th of June at the McMechan Auditorium. Dr. Andrew McKay, President of Dalhousie University, welcomed the participants. Prof. Elisabeth Mann Borgese spoke on the objectives of the Course and her hopes of the benefits which the participants would derive from it. The Course Director, in his address to the gathering, identified the salient features of the LoS Convention, describing its principle benefits to States and to the international community as a whole. He also spoke of the linkages which existed between the different activities of man in ocean space, and of the need to understand these linkages and to harmonize them.



The participants then plunged into the beginning of ten weeks of interdisciplinary study of all aspects of ocean management. The first week was devoted to an analysis of the UN Convention on the Law of the Sea, the new international order of the oceans, and the growing importance of the oceans in world economics and politics.

The first two days of the second week were taken up with the presentation and discussion of country reports prepared by the participants on some aspects of ocean management in their own country, sub-region, or region. The remainder of the week was spent on the analysis of the emerging trends in ocean management and an introduction to oceanography. This included marine geo-sciences, physical oceanography, and the interactions between ocean and atmosphere, upwelling and fisheries, coastal and marginal marine areas, and methods for carrying out research. On the fifth day, Dr. Larry Newman of

the Ocean Economics and Technology Branch of the UN Secretariat, discussed the subject of energy from the oceans.

The third week began with a visit to the Bedford Institute of Oceanography where the participants learned about the many and diverse areas of research being carried out there. On the following day the participants visited the marine command of the Canadian Department of National Defence. The purpose of this visit was to find out how Canada conducts monitoring and surveillance activities of foreign fishing vessels in its EEZ. Air surveillance is undertaken by the Department of Defence on behalf of the Department of Fisheries and Oceans. For this purpose they use 18 long-range airtrack (aurora) aircraft and 18 tracker aircraft. The aircraft must have low-level flying capability, good manoeuvrability, good communication equipment, day and night photography equipment, search lights, and forward-looking infra ray. Surveillance by ship is carried out jointly by the Department of Fisheries and Oceans which has eight vessels, and the Department of Defence which uses destroyers for this purpose. In the afternoon the participants visited such a destroyer at the Halifax Naval Base.

Lectures on fisheries resource management, the allocation of surplus, technology transfer, and the use of computers for the storage, retrieval, and analysis of fisheries data made up the remainder of the week.

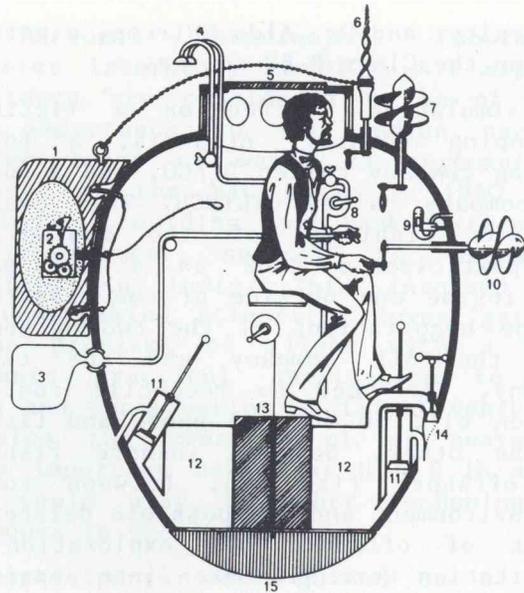
The classes during the fourth week were intended as preparation for the intensive training in fisheries and oil and gas which would take place in the fifth and sixth weeks. Dr. Geoffrey Kesteven presented lectures on all aspects of fisheries science, and Dr. Arthur Hanson of the Dalhousie Institute of Resource and Environmental Studies spoke on aquaculture.

To prepare the students for the intensive course on oil and gas, three experts were invited to speak. Dr. Graham Williams of the BIO spoke to the course on the geology of oil. Dr. Leonard Kasdan, of Dalhousie University, spoke on the impact of oil on coastal communities, and Dr. Robert Meagher, of the Fletcher School of Law and Diplomacy, spoke on the structure of the oil industry and on the various national models for developing offshore oil resources.

As in Class B-1982, the participants divided into two groups for the fifth and sixth weeks of the programme which were devoted to intensive courses on oil and gas, and fisheries science. Prof. Barry McLean of the Nova Scotia Institute of Technology, and Mr. George Sutherland, of Geofossil Canada, conducted the oil and gas course, with assistance from Dr. John Vandermeulen, of the BIO, on the subject of environmental impact. They began with a general introduction to the subject including the accumulation of oil and gas, their location, and methods for their discovery. They then went on to examine methods of geological exploration for oil and gas; introduction to land-based drilling operations; basic drilling procedures; well completions; field production operations; custody transfer; transportation and refining; basic offshore drilling; specialised offshore equipment; offshore rig supply and support systems; communications; environmental impact; and offshore contracts. They also visited a refinery, an LNG tanker, and an offshore oil rig. From the feedback obtained from the participants, the oil and gas course was a smashing success.

The other half of the participants underwent an intensive course on fisheries management. The first week was spent at the Nova Scotia School of Fisheries located at Pictou. Here they were given lectures as well as practical training in navigation, net and gear technology, and the repair and maintenance of small diesel and outboard engines. During the second week, the participants visited Dalhousie University's shellfish hatchery, the University's field station at Pleasant Point, and the trout hatchery at Fraser's Mills. They also visited Cape Breton to see the farming of rainbow trout, a fishing company, a fish processing plant, and a yard where fishing vessels are built.

Week seven of the Class B course concentrated on offshore mining of minerals. David Pasho of the Ocean Mining Division of Canadian Oil and Gas Lands Administration, discussed the origin of polymetallic nodules, their distribution, the technology for recovering and processing them, and the economics of doing so. Mati Pal of the Ocean Economics and Technology Branch of the UN discussed the world mineral market and considered the question of whether deep seabed mining will affect the world market.



One of the most exciting lectures of the Programme was given by Dr. Alexander Malahoff of NOAA, on the recent discovery of polymetallic sulfides. He explained the new multi-beam echo sounding system, SEABEAM, which provides a "God's eye view of the ocean bottom" at 2200 to 3400 metres. This system has shown the traditional bathymetric charts to be 100% inaccurate, and is being used now to produce entirely new maps of the ocean floor.

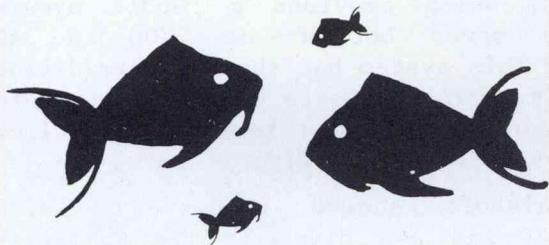
Dr. Malahoff showed slides and video films of his own dives in the submarine, Alvin, in which he discovered the hydrothermal polymetallic sulfide mounds and chimneys. He also discussed the 1979-80 discovery of the polychaetes, Riftia and Alvinella. These unisexual worms are 70% bacteria, have no guts (only gills), and ingest hydrogen sulfide, a toxic substance. In fact, they are not animals in the traditional sense. They could be described, Dr. Malahoff joked, as "highly sexed, gutless, heavy breathers".

Dr. Malahoff went on to discuss the economics of mining these sulfides. As they are richer in zinc, for example, than land-based sources, and contain 400 ppm of cobalt, a strategic mineral, as well as being renewable and located within the 200 n.m. EEZ -- they are definitely worth mining. It has been calculated that they could be mined at a profit of at least \$100/ton, and the US government is thinking of mining the sulfides within their own EEZ within the next fifty years. A truly remarkable discovery.

The remainder of the seventh week was taken up with a simulation exercise designed by Prof. Gilbert Winham of Dalhousie

University, and Dr. Aldo Chircop, a participant on the Class B-82 course.

The simulation centred on a fictitious developing country, Atlantis, a foreign fishing company called DIFCO, and a foreign oil company called OILTECH. This exercise was the highlight of the course. All the participants took an active part--both inside and outside of the classroom--in the negotiations of the two agreements with the oil company and the fishing company. The need to reconcile conflicts between oil, on the one hand, and fishery, on the other, between inshore fishermen and offshore fishermen, between tourism and environment and the possible deleterious effect of offshore oil exploration and exploitation were all taken into consideration.



In the end, the fishery negotiations were concluded successfully with an agreement, but the oil negotiations failed to produce an agreement.

The eighth week of the course was given over to the discussion of shipping and navigation, ports and harbours, and the protection of offshore labour.

Week nine began with a discussion of the sinking of the oil rig, Ocean Ranger, off the coast of Nova Scotia. This led to discussions of whether the Ocean Ranger was a structure or a ship, what safety regulations should apply to oil rigs, and the problems of dividing jurisdiction over the continental shelf between the national government, the provincial government, and the international community. The second half of the week was devoted to the subject of systems analysis and how it could be applied to the management of the EEZ. Donald Straus and Michael



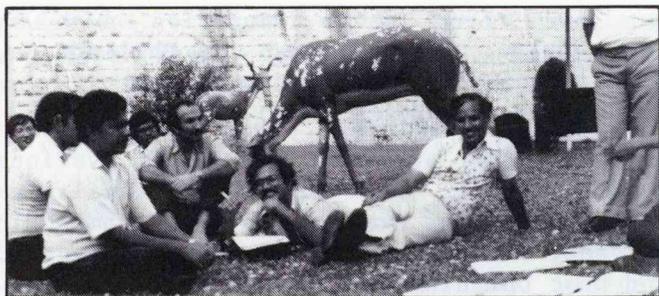
Class B Participants on field trip to oil rig.

Staley of the IIASA demonstrated the use of the computer in negotiations and in systems analysis.

The final week of the course concentrated on a discussion of national legislation and the institutional infrastructure required for the implementation of the new Law of the Sea. The relationship between ocean management and national development strategy was also discussed. The Venezuelan model for the management of living resources, and the Norwegian model for the management of mineral resources were presented.

The course came to a conclusion on the 19th of August. At the Closing Ceremony addresses were heard from the Course Director, Ambassador Tommy Koh, from Participant Mansoor Aalameefar from Iran, Participant Alan Goodridge from Trinidad and Tobago, and Prof. Elisabeth Mann Borgese of the IOI. The Keynote Address was made by the Right Honourable Gerald Regan, the Canadian Minister for International Trade, and the Mayor of Halifax initiated all the participants into the ancient order called the "Order of the Good Time".

And thus ended the tenth course in the IOI's Training Programme. The participants boarded their flights bound for all corners of the earth, loaded with new experiences and insights to the problems of ocean space. And hopefully, the next IOI Newsletter will tell us how they are putting what they learned to use.



Class C Participants relaxing on field tour in India (Vanderbilt)

## CLASS C - 1982: GOA, INDIA

The first Class C course on regional ocean management opened in the beautiful city of Dona Paula in Goa, India, on the 4th of October 1982. The 23 participants on this programme were all mid-career civil servants from eight of the countries bordering the Indian Ocean and adjacent seas. They gathered under the direction of Dr. Geoffrey Kesteven and Dr. T.S.S. Rao with the aim of acquiring the new concepts and skills which will be needed for the job of integrating marine resources and ocean management into their individual countries' development strategies.

This programme was the first in a series of regional programmes ("Class C"). It was developed and conducted with the assistance and cooperation of the Ministry of External Affairs, the Department of Ocean Development of the Government of India, the Indian National Institute of Oceanography, as well as the Canadian International Development Agency (CIDA), the Commonwealth Secretariat, UNEP, FAO, UNESCO/IOC, and IIASA.

The programme covered all facets of the marine activities of this region, stressing that the problems of the oceans are closely interrelated and must be considered as a whole. This included lectures and discussions on the management of living and non-living resources, navigation and shipping, environment and development, marine scientific research, planning and policy, and much more.

During the eighth and ninth weeks of the course the participants toured through southern India, the Maldives, and Sri Lanka where they examined sites of national and regional scientific research and development.

The trip began on the 23rd of November in Bangalore where the participants visited

the National Aeronautical Laboratory (a sister laboratory to NIO). All aspects of science are considered to be of very great importance to the Indian people, not the least of which is aeronautics. To this end the NAL began in 1960 with the aim of providing full back-up research and development support to aerospace activities in India. This involved not only undertaking scientific investigations of the problems of flight with a view to their practical application to the design and construction of flight vehicles, but also the creation of an awareness of the important role that R & D in aerospace could play in other technological endeavours in the country.

The participants were guided on a tour around the extensive facilities of the NAL. This included laboratories devoted to research in the fields of propulsion, materials science, structural science, systems engineering, wind energy, and aerodynamics.

In the afternoon a visit was arranged to the Space Application Centre where the participants learned about the use of satellites in the management of resources. Models of the Indian Remote Sensing Satellites, Bhaskara and Aryabhata, were used to illustrate the monitoring of pollution, oil slicks, fish movement, and geological features. Each picture taken from the satellites covers 25 square kilometres. By overlaying this data it is possible to produce previously unobtainable data collections which are then centralised and used to improve the policy and procedure of natural resource management.



One of the 2000 Maldivian Islands

(Vanderbilt)



Jasmine seller in Cochin

(Vanderbilt)

Two days later, in Cochin, the "Malta group", as the participants came to be known, visited CIFNET or the Central Institute of Fisheries, Nautical, and Engineering Training. The group was given a brief talk about the purpose, aims, and history of CIFNET. They learned that twenty years ago the catamarans used on the east coast of India were solid wood, whereas those on the west coast were hollow. There was the need to extend the fisheries offshore into deeper and more distant waters. This required larger boats which in turn demanded special training. With this in mind the Government of India established this Institute in 1963. It provides for the training and certification of the personnel required to man the medium and large size ocean going fishing vessels. CIFNET also trains the technicians necessary for the supporting shore installations.

The Institute has divisions which concentrate on the fisheries, gear, technology, and nautical aspects of training. The majority of the students are Indian,



Class C-82 visiting CIFNET in Cochin

(Vanderbilt)

but many from other countries such as Fiji, Ghana, Nigeria, and the Philippines, have also undergone training.

The IOI participants were taken on a tour of the premises and shown various types of gear, as well as the facilities for net making, navigation and seamanship classes, and engine maintenance and repair, and boat building.

That afternoon the participants made a brief visit to the NIO office in Cochin and learned something of their research on pollution control.

Afterwards they visited the Central Marine Fisheries Research Institute (CMFRI) where they were met and addressed by the Director, Dr. E.G. Silas. This Institute, which was established in 1947, has laid the foundation for ocean management in India. Its objectives are to conduct short- and long-term multidisciplinary research on the capture and culture of marine species in order to provide research support for the rational exploitation, conservation, and management of both marine and brackish water coastal resources, and to increase production in the Indian EEZ. It also provides development support through the transfer of technology, dissemination of information, education and training.

There are 12 regional centres, 40 field centres, and 3 field experimental laboratories employing 1500 people. The research programme concentrates mainly on tuna and related species, as well as on squids on the continental shelf (pelagic resources), and highly migratory species. In discussions about highly migratory species, Dr. Silas touched on the special management problems of tracking these animals. He gave the example of one tuna which was caught off the coast of Bali. Records showed that it had originally been tagged in South Australia -- 21 years earlier.

Dr. Silas explained that CMFRI was mainly concerned with tuna resources in the Arabian Sea, the Bay of Bengal, and the Indian Ocean. He stressed the need for a management system for stock-sharing among the countries with fleets fishing in the Indian Ocean area. At present there is unlimited entry into the tuna fishing zone. There is also inadequate data for catch, effort, and size composition. All of this shows the need for careful monitoring and an international

management system which would collect and disseminate data, as well as provide for surveillance and enforcement. And it is clear that this system will depend on regional and international understanding and cooperation among the participating countries.

From Cochin the participants traveled south to Trivandrum where they visited the Vikram Sarabhai Space Research Centre and learned more about the Indian experience in the development and launching of rockets and satellites.

From this Centre the group went on to visit the Thumba Equatorial Rocket Launching Station (TERLS) which is located exactly on the geomagnetic equator. Here a launching takes place each Wednesday from which information is gained about the earth's magnetic field, x-ray astronomy, meteorology, etc. The rockets are launched, completely by remote control, at an angle of 85 degrees and travel to an altitude of 60-120,000 kilometres before beginning their fact finding descent. At the time of the Class C visit a total of 1469 rockets had been launched.

Satellites are launched in a similar manner and reach a speed of 28,000 km/hr at their point of entry into orbit. The first satellite launched at TERLS was the Russian built Aryabhata. It was sent up in 1975 and weighed 360 kg. The seventh and most recent launching was Insat 1A which was from the USA. It went up on the 10th of April 1981 and weighed 1150 kg. It failed, however, at a total cost of \$15 million.



"Taxi" from airport in the Maldive islands (Vanderbilt)

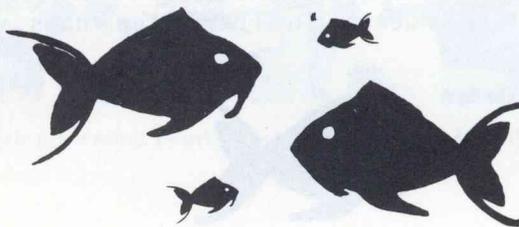


Light ship ELBEI on the Elbe estuary (Duca)

The next day the group traveled on south to visit the beautiful Padmanabhapuram Palace, built in 1550, at Thuckale, and the Suchandran Temple of Lord Hanuman. The afternoon brought them to the southern most tip of India, Cape Cormorin, where the Bay of Bengal, the Arabian Sea, and the Indian Ocean all meet. An impressive sight to behold.

The following day the participants returned to Trivandrum and boarded a plane to Male in the Maldive Islands, a beautiful chain of some 2000 low-lying coral islands grouped in twelve clusters or atolls. Only about 220 islands are inhabited and the principal industry is fishing.

From Male the participants flew on to Colombo, Sri Lanka, where they were joined at their hotel by two previous IOI participants from the 1982 Class B course: Leslie





Class C-82 viewing newly developed fish products at NARA in Sri Lanka (Vanderbilt)

Joseph and Dianeetha Sadacharan, both of whom work for the Sri Lankan National Aquatic Resource Agency (NARA).

The visit to the headquarters of NARA the next day proved an interesting experience. The group was greeted by the Director-General, Dr. Onil Perera, and learned that NARA is the research arm of the Ministry of Fisheries. It began in October 1981 and has a staff of 180, forty of whom are scientific officers. This was followed by a tour of the laboratories and further information on their various research projects.

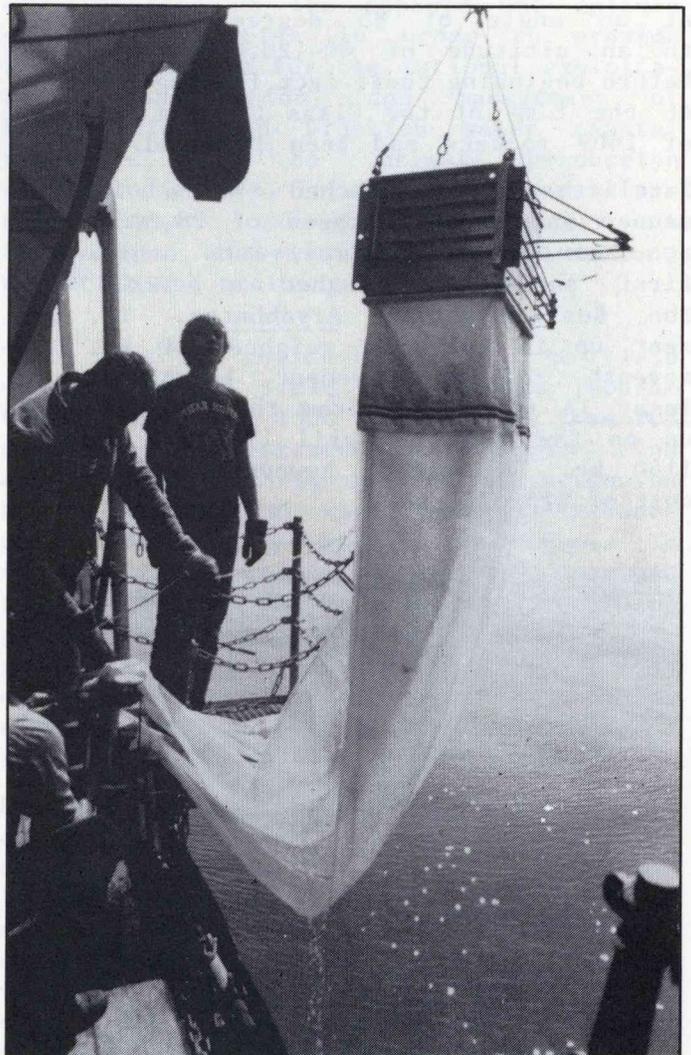
During the four day stay in Sri Lanka the participants were given the opportunity to view several aspects of marine oriented activities including field tours to the Lever Brothers prawn hatchery, the Cey-Nor Development Foundation Fish Net Factory, and a yard where fiberglass boats are built for Sri Lankan fishermen through a government subsidy and funding from Abu Dhabi. This yard also constructs pleasure boats for export thereby increasing the country's foreign exchange holdings.

NARA also saw to the social needs of the participants by organising a delicious dinner party to which were invited all the Sri Lankan participants of earlier IOI Training Programmes.

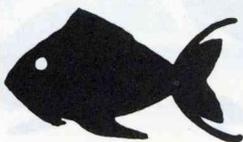
Thus, the field tour came to an end and on the 5th of December the participants arrived in Bombay to begin the work of their final week. The next few days were

spent polishing their Final Report and on the 9th of December the Closing Ceremony was held at the Palm Grove Hotel. Here the participants presented the findings of their ten weeks of study and research to invited experts from various fields. Comments and discussion followed and the Programme came to a close with a Farewell Luncheon.

And so ended the first Class C regional Training Programme on EEZ Management. The participants returned to their various homes armed with masses of new data and viewpoints, and filled with the spirit of regional cooperation and an awareness of the indivisibility of development and peace. The participants' Report is in the final stages of publication and it is hoped that this very substantial document will become available in the next few months.



Sampling net being demonstrated on board RV Valdivia (Duca)



"Your effort in promoting concerted management/conservation of the resources is definitely playing a major role in the overall endeavours of the developing countries to contribute to this understanding of the oceanic environment, and our Institute will always cherish your effort."

S. Allela Director, Kenya Mar. & Fish. Res. Inst.

## CLASS C - 1983: SOUTH PACIFIC

It is hard to imagine a more beautiful place in the world to hold a Training Programme than the Fiji islands, but on the 30th of May this year, the second IOI regional course on Ocean Management began at the Institute of Marine Resources of the University of the South Pacific (USP) in Suva. This course was held in cooperation with the Forum Fisheries Agency, and the Institute of Marine Resources. It was jointly funded by the Canadian International Development Agency (CIDA), the Commonwealth Secretariat, the UN Development Programme, and the International Sea Grant Program.

Fiji is actually an archipelago made up of more than 300 islands and USP is on the largest, Viti Levu. It is a mountainous island of volcanic origin, covered with lush vegetation and surrounded by coral reef. What better place to bring together participants to study the special concerns of small Island States of the Southwest Pacific with regard to EEZ management.

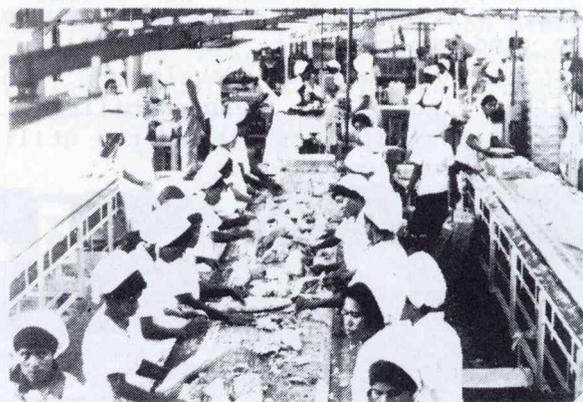
The 17 participants on the course came from Tonga, Fiji, Vanuatu, Solomons, Kiritabi, Papua New Guinea, Cook Islands, Tuvalu, and the Federated States of Micronesia. They were all officers in the fields of fisheries, foreign affairs, surveillance and enforcement, law, and administration.

The course opened on a warm, sunny morning with a welcome by the Vice-Chancellor of the University, Prof. F. Brosnahan. This was followed by an address by the Prime Minister of Fiji, the Right Honourable Ratu Sir Kamisese Mara, who spoke to the participants about the rights and responsibilities of the Pacific Island States in view of the recently adopted LoS Convention. Dr. Geoffrey Kesteven, whom most IOI participants already know and admire, was the Course Director.

The combined 200 nautical mile Exclusive Economic Zones of the Pacific Island nations form the largest EEZ area of the world. And considering the importance of fisheries to the Island States of this region, the first week of the course focused on living resources in general, and fisheries in particular.

The participants were addressed by Miss Hannah King, of the Commonwealth Secretariat, on the nature of renewable resources; by Drs. U. Raj and Leon Zann of the IMR/USP, on coral reefs and artisanal fishing, respectively. Peter Kunatuba, of the Pacific Islands Development Program discussed fish culture in the islands, and Bob Kearney of the South Pacific Commission spoke on skipjack, tuna, and other migratory fishes. Les Clark of the Forum Fisheries Agency addressed the questions of the organisation of distant water fleets, the economics of the fishing industry, and the utilisation of ocean fish resources. Graham Southwick of the IKA Corporation gave a talk on national fishing companies, and Stephen Halapua of the School of Social and Economic Development discussed the socio-economic aspects of fisheries. Geoffrey Kesteven rounded up the week with lectures on the fisheries of the Pacific Island EEZs, and fishery products.

At the end of the first week the participants boarded a University vessel and journeyed to Levuka, the old capital of Fiji, on the island of Ovalau. As June is a winter month in the South Pacific, it was not surprising that it rained throughout the day but this did not dampen the enthusiasm of the group as they visited the Pacific Fishing Company, one of the major fish processing plants of the islands.



Fish processing plant in Levula on Ovalau Island, Fiji.

Here more than 350 people are employed in the freezing, packing, and canning of albacore and skipjack for export and for local markets. At the time of the visit, the plant was packing approximately 30 metric tons of albacore per day. This would be exported under several different labels all over the world for human consumption. The group learned that the by-products were used to produce cat food which was exported, under twenty different labels, and fish meal which was sold locally.

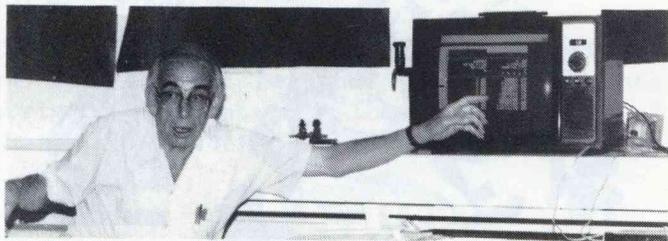
Even though living resources are the major concern of the Pacific Island States, other aspects of ocean space management were also to be examined. The second week, therefore, was spent looking at nonliving resources. This included nearshore and offshore minerals, oil and gas, ocean energy, as well as the prospects and hazards of utilizing the nonrenewable resources of the Pacific.

Talks were also given on transport and shipping, ports and harbours, tourism, interactions between uses, and the resolution of conflicts of interests in resource use.

At the end of the week the participants were given a demonstration of the use of an Apple II computer for the analysis of fisheries data.

On the Saturday of that second week the participants spent the day visiting the Ports Authority of Fiji, the IKA (national fishing company) port, and a fisheries cooperative to learn how Fiji is managing its own EEZ.

The third week of the course looked at research, development, regulation, and regional cooperation in the fields of commercial and artisanal fisheries, offshore mining, environmental conservation, surveillance and enforcement, as well as the objectives of national development plans, and the rights and responsibilities of Island States with respect to the utilization of EEZ resources.



Geoffrey Kesteven demonstrating the Apple II computer to Class C-Fiji  
(Vanderbilt)



Fishing vessels built by the Fiji national fishing company IKA  
(Vanderbilt)

At the beginning of this Class C course, the participants had been divided into four groups for the purpose of producing reports on four different aspects of EEZ management. During the final week of the Programme the groups presented their reports. The first group dealt with strategies for the development and management of fishery resources. Group II concentrated on the development and management of other ocean resources. Group III chose to report on the problems of regulation, surveillance, and enforcement with reference to fisheries and other maritime activities. And the fourth group wrote on strategies for regional cooperation in ocean affairs. Throughout the week each report was presented in draft form to the course participants, invited experts, and others associated with the Programme. Long discussions took place and revisions were made with the final document being presented at the Closing Ceremony to representatives of the sponsoring agencies. Mrs. Hilda Bateman was present for the Canadian International Development Agency (CIDA), Mr. Harry Sperling for the UN Development Programme, and Prof. Elisabeth Mann Borgese for the IOI.

And so the second IOI Class C course came to a close. The best assessment of this course comes from the Conclusion of the Participants' Report: "The course has provided a rare opportunity for participants to discuss and explore essential issues on ocean resources. The coming together of Island States to discuss various issues is one way which has contributed to the effective, rational, and beneficial utilization of ocean resources. There is a need to perpetuate this."

The IOI will, of course, continue to work in cooperation with the FFA and other Southwest Pacific regional organisations to provide the follow-up activities recommended by the participants of this course.



## PACEM IN MARIBUS XI - MEXICO

Last year, on a warm October morning, 82 people from 36 countries gathered together in the impressive conference room of the Mexican Ministry of Foreign Affairs to open the eleventh Pacem in Maribus Convocation. Pacem in Maribus, or PIM, is the name of an annual gathering of economists, lawyers, scientists, diplomats, and international civil servants who come together for interdisciplinary discussions of international ocean affairs centred on the concept of ocean space as a common heritage of mankind.

PIM XI, which was held in cooperation with the Mexican Government's Secretaría de Relaciones Exteriores, examined the many changes which have been set in motion at the national level by the adoption of the Convention on the Law of the Sea. And as the discussions progressed, it became evident that the Convention marked the beginning of a process of profound transformation, not only in international relations, but also in the internal affairs of States.

Throughout the four days the delegates examined the interaction between internal and international development, noting the creation of new forms of scientific/

industrial cooperation between "North" and "South". They dealt with the impact of the Convention on national fisheries and food policy and noted that the emphasis of the problem has shifted from the legal to the socio-economic level. They considered the impact of the Convention on marine scientific research and the protection and conservation of the marine environment and became more acutely aware of the interaction between internal and international activities.

International cooperation, in all sectors of ocean policy development, must be based on strong national infrastructure; and strong national infrastructure can only be built, in many countries, through international cooperation.

It was good to see among the delegates of this Convocation several past participants from the IOI Training Programmes. Dr. Rafael La Rotta of Colombia (B-81) was there, as were Mr. Piyawat Niyomrerks of Thailand (B-80), and Mr. Thomas Sherman of Liberia (B-80). In addition, one member of the Mexican delegation at PIM XI was nominated to attend the EEZ Management course in Canada this summer: Miss Guadalupe Cuellar Morales.

There were also lecturers from the Training Programme in attendance: Mr. Anil Gayan of Mauritius, Dr. Christopher Pinto of Sri Lanka, Dr. Alberto Székely of Mexico, Dr. V.K.S. Varadan of India, and Ambassador Layachi Yaker of Algeria.

The Convocation came to a successful conclusion on the 29th of October. Because of the timeliness and importance of the subject, it was decided to issue the Working Papers in a provisional, unedited volume for use at the final session of the UNCLOS in Jamaica in December. In the coming months the tapes of the proceedings will be transcribed and edited and a trilingual publication will be issued.



Alberto Székely and Victor Solano addressing PIM XI in Mexico City  
(Vanderbilt)



Outrigger shrimp boats in Sri Lanka

### PACEM IN MARIBUS XII - SRI LANKA

It is with great pleasure that we look forward to the next Pacem in Maribus Convocation which will take place later this year under the auspices of the Sri Lankan Ministry of Foreign Affairs

It is with great pleasure that we look forward to the next Pacem in Maribus Convocation which will take place later this year under the auspices of the Sri Lankan Ministry of Foreign Affairs, in Colombo, Sri Lanka.

Pacem in Maribus, or PIM, is the annual convocation of the IOI. Each year the conference concentrates on a special area of discussion. This year, in anticipation of trends and problem areas in the implementation and further development of the Law of the Sea and its impact on the building of a new international order, the theme of "International Cooperation and Marine Scientific Research" has been chosen.

The meeting will take place at the Mount Lavinia Hotel from 25 to 28 October. The draft agenda is produced here:



### INTERNATIONAL COOPERATION AND MARINE SCIENTIFIC RESEARCH

October 25, Tuesday

1000 - 1200

Opening Ceremony:  
Minister for Foreign Affairs

Welcome Address:  
Director, National Aquatic Resource

### INTERNATIONAL COOPERATION AND MARINE SCIENTIFIC RESEARCH

October 25, Tuesday

1000 - 1200

Opening Ceremony:  
Minister for External Affairs

Welcome Address:  
Director, National Aquatic Resource Agency

Opening Remarks: Ambassador L. Yaker  
President, IOI Board of Trustees

"Prospects for Mar. Scientific Cooperation  
in the Context of the North-South Dialogue"

Opening Remarks: Prof. E. Mann Borgese  
Chairman, IOI Planning Council

"Scientific Cooperation and the Prep. Com.  
for the International Seabed Authority"

Keynote Address: Prof. Alexander Yankov  
IOI Planning Council Member

"The United Nations Convention on the Law  
of the Sea, the New International Economic  
Order, and Marine Scientific Research"

1500 - 1800

First Working Session

Marine Scientific Research: An Overview

What is MSR? What is its purpose?  
MSR as a prerequisite for any marine  
activity of man.

Prof. Roger Revelle  
Board of Trustees, IOI

Marine scientific technology. State  
of the art. Cost of instrumentation.  
Levels of research. The role of  
government. National infrastructure.  
Policy and regulation.

Developed countries:

Dr. Jean-Claude Pujol, CNEXO  
Soviet scientist, to be nominated

Developing countries:

Dr. Saigal, India  
Dr. Kaldone Nweihed, Venezuela

October 26, Wednesday

1000 - 1300

Second Working Session

International Cooperation in MSR

The Intergovernmental Level:  
Soviet scientist, to be designated

The Nongovernmental Level:  
Dr. Z. Pravdić, Yugoslavia

The Regional Level:  
EEC Cooperation in R & D in Advanced  
Technology

EEC, to be designated  
Prospects for Regional Centres  
in Developing Countries, in accordance  
with the LoS Convention  
Lennox Ballah, T'dad & Tobago

The level of industrial cooperation  
Dr. A.K. Malhotra, India  
Dr. Erich Blissenbach, FRG

1500 - 1800

Third Working Session

Areas of Conflict and Cooperation

The political impact of MSR as  
part of over-all politics between  
States in terms of North-South  
and East-West problems.

Dr. Alexander King, U.K.

MSR and National Security  
Minister Anil Gayan, Mauritius

National Sovereignty and MSR  
Dr. Ashok Parthasarathi, India



October 27, Thursday

1000 - 1300

MSR in the Indian Ocean

Overview: The Indian Ocean Expedition  
and After

Speaker to be designated

Cooperation on the Conservation  
of Marine Mammals in the Indian Ocean  
Dr. Sidney Holt, U.K.

Monitoring the Indian Ocean Environ-  
ment

Dr. Stjepan Kečkeš, UNEP

1500 - 1800

Fisheries Research in the Indian Ocean  
Dr. Dwiwedi, India

Cooperation in the Exploration  
of Nonliving Resources  
Speaker to be designated

Region Centre(s)  
Dr. E.G. Silas, India

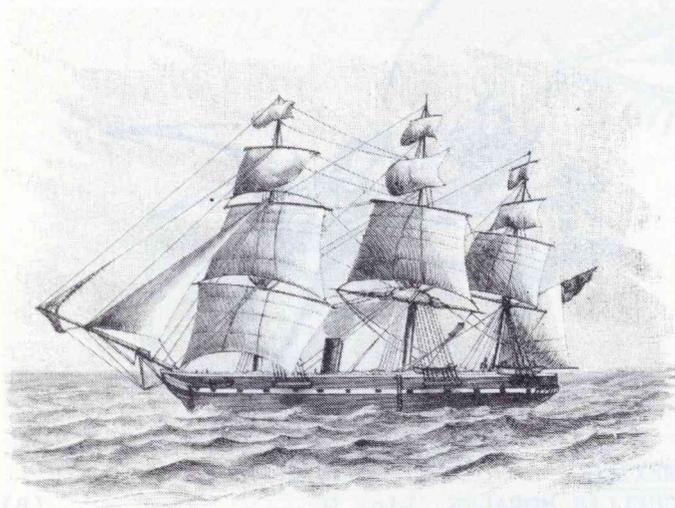
The Indian Ocean as a Zone of Peace  
Dr. Christopher Pinto, Sri Lanka

October 28, Friday

1000 - 1200

Summing up and Recommendations

Farewell Banquet



## 1983 PARTICIPANTS: CLASSES A & B

Listed here are the names and addresses of those participants who have attended the 1983 Classes A and B. The next issue of this Newsletter will contain a complete list of all participants who have attended the Training Programme since 1980.

### BRITISH VIRGIN ISLANDS

WALTERS, Mr. R. (B)  
Fisheries Officer, Agriculture Dept.  
Roadtown, Tortola

### CAMEROON

SHEI NDZI, Mr. E. (A)  
Geologist  
Ministry of Mines and Power, Yaounde

### CHINA

LIU, Mr. W.-Z. (A)  
Assoc. Prof. of International Law  
Foreign Affairs College, Beijing

### COLOMBIA

GONZALEZ LOPEZ, Mr. M. (B)  
Senado de la Republica  
Calle 45, No. 13-75; Bogotá

### COSTA RICA

CAMPOS MONTERO, Mr. J. (B)  
CIMAR, Escuela de Biología  
Universidad de Costa Rica, San José

### CYPRUS

XENOPHONTOS, Mr. A. (A)  
Law Office; 14, Makarios Avenue  
Mitsis Building 2, Office 22, Nicosia

### EGYPT

BERZAN, Mr. S.M. (B)  
Oceanography Dept., Suez Canal Univ.  
Ismailia

### INDIA

SAMBASIVAM, Dr. S. (B)  
CAS in Marine Biology, Annamalai Univ.  
Parangipettai 608 502

SHASTRI, Mr. S.M. (A)  
Dept. of Mining Engineering  
Indian Inst. of Technology, Karagpur

SHREEHARA MURTHY, Dr. T.R.M. (A)  
Post-Grad. Dept. of Marine Geology  
Mangalore University

SUNDAR, Dr. V. (B)  
Ocean Engineering Centre  
Indian Inst. of Technology, Madras

### INDONESIA

DAHURI, Mr. R. (B)  
PUSDI-PSL, IPB  
Jalan Raya Pajajaran, Bogor

### IRAN

AALAMYFAR, Capt. M. (B)  
Port and Shipping Organization  
College Enghelab Ave., Tehran

JAHANGIR, Mr. B. (A)  
Third Secretary  
Ministry of Foreign Affairs, Tehran

RASHEDI OSKOUI, Mr. R. (A)  
Environmental Engineer  
Department of Environment, Tehran

### KENYA

KAIRU, Mr. K.K. (A)  
Geologist; Kenya Mar. & Fish. Res. Inst.  
P.O. Box 18651, Mombasa

OUMA, Miss A.A. (B)  
Kenya Marine & Fisheries Res. Inst.  
P.O. Box 18651, Mombasa

### KOREA, REPUBLIC OF

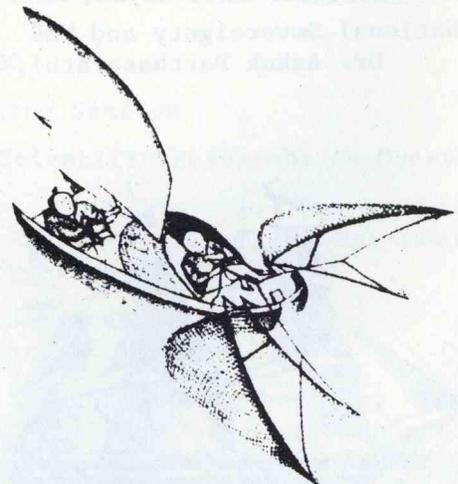
PARK, Mr. C.-W. (A)  
Mining Engineer  
Korea Inst. of Energy & Resources, Seoul

### MALTA

DUCA, Dr. D. (A)  
Engineering Geologist  
Malta Shipbuilding Co. Ltd., Marsa

MEXICO

CUELLAR MORALES, Lic. G. (B)  
Ministry of Foreign Affairs  
Mexico City, D.F.



SIERRA LEONE

FERGUSON, Mr. K.A. (B)  
Fisheries Division  
Ministry of Natural Resources, Freetown

KOWA, Mr. K.R. (B)  
IMBO, Fourah Bay College  
University of Sierra Leone, Freetown

SOMALIA

TURONJI, Mr. M.I. (B)  
Judge, National Security Court  
C.P. 956, Mogadiscio

SRI LANKA

FERNANDO, Miss N. (B)  
National Aquatic Resources Agency  
Crow Island, Colombo 15

SILVA, Mr. E.I.L. (B)  
National Aquatic Resources Agency  
Crow Island, Colombo 15

TANZANIA

KATONDA, Mr. K.I. (B)  
Dèputy Principal  
Kunduchi Fisheries Inst., Dar-es-Salaam

KUDOJA, Dr. W.M. (A)  
Lecturer in Chemical Oceanography  
University of Dar-es-Salaam

THAILAND

CHIRANOND, Mr. K. (B)  
Legal Officer, Treaty and Legal Dept.  
Ministry of Foreign Affairs, Bangkok

SINGUSAHA, Mr. T. (A)  
Legal Officer, Treaty and Legal Dept.  
Ministry of Foreign Affairs, Bangkok

TRINIDAD AND TOBAGO

CHIN-YUEN-KEE, Mrs. Z. (B)  
Fisheries Div., Ministry of Agricult.  
Port-of-Spain

GOODRIDGE, Mr. J.A. (B)  
Institute of Marine Affairs  
P.O. Box 3160, Carenage

WEST, Miss L.M. (B)  
Ministry of External Affairs  
Port-of-Spain

TURKEY

TURGAY, Mr. M.I. (B)  
Mineral Res. and Explor. Institute  
Dept. of Geophysics, Ankara

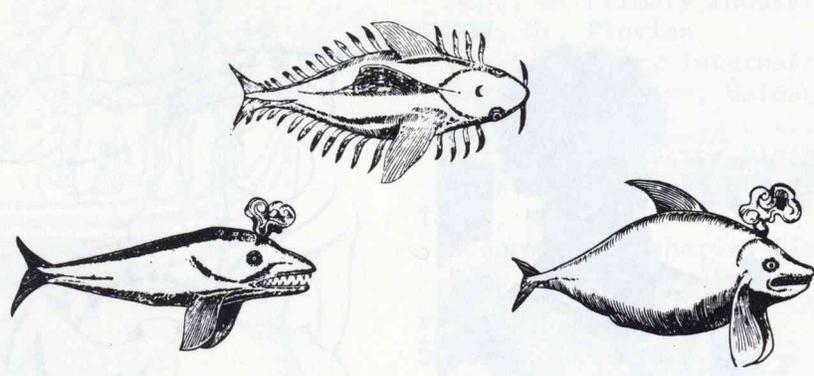
YUGOSLAVIA

ZIBELNIK, Miss. A.I. (B)  
Graduate Student, Business Admin.  
Rivier College, Nashua, N.H., USA

OBSERVERS

GELPKE, Mr. N. (B)  
Student, University of Zurich  
Zumikerstr. 20A, Kusnacht, Switz.

PARSONS, Mr. A. (B)  
Student, Dalhousie University  
2309 Brunswick St., Apt. 1208, Halifax



## CLASS C PARTICIPANTS: 1982 - INDIA & 1983 - FIJI

Listed here are the names and addresses of those participants who have attended the first two Class C courses. Those who take part in Class C - Algeria will be listed in the January issue of Across the Oceans.

### COOK ISLANDS

HOWARD, Mr. N. (83)  
Fisheries Research Officer  
Min. of Marine Resources, Rarotonga

### FIJI

BALEIKDAVU, Mr. J. (83)  
Director, Maritime Surveillance  
Ministry of Home Affairs, Suva

TUILAUCALA, Mr. S. (83)  
Senior Fisheries Officer  
Ministry of Fisheries, Nawori

### INDIA

BASRA, Asst. Cmdt. S.P.S. (82)  
113 Maya Nagar  
Ludhiana 141 001

DESHMUKH, Mr. V.D. (82)  
Central Mar. Fisheries Res. Inst.  
M.G. Road, Bombay 400 023

JOSEPH, Mr. P.J. (82)  
Exploratory Fisheries Project  
Botawala Chambers, Bombay 400 001

KARVE, Cdr. A.N. (82)  
71 Vijayanagar Colony  
Sadashir PCM, Pune 411 030

KRISHNA, Mr. (82)

Fisheries Div., Dept. of Agri. & Coop.  
Krishi Bhavan, New Delhi 110 001

KRISHNAN, Dr. L. (82)

Prawn Culture Lab., CMFRI  
Narakkal 682 505, Kerala

MUKHERJEE, Mr. C.K. (82)

Planning & Coordination Dept.  
Indian Inst. of Tech., Kharagpur

RAHA, Mr. B.N. (82)

GSI OME & M.G. Division  
4 Chowringhee Lane, Calcutta 700 016

RAMAKRISHNA, Mr. M. (82)

ONGC Regional Geology Laboratory  
71 Kenjurmarg (East), Bombay 400 078

RAMAN, Mr. S.P. (82)

Offshore Min. Explor., Mar. Geol. Wing  
Ratnagar Building, Calcutta 700 016

SARKAR, Mr. B. (82)

Dept. of Naval Architecture  
Indian Inst. of Tech., Kharagpur

SINGH, Lt. Cdr. N.P. (82)

Directorate of Naval Ocean. & Meteor.  
Naval Headquarters, New Delhi 110 017

VIDYARTHI, Lt. Cdr. S.K. (82)

Command Met. Officer, HQ Eastern  
Naval Command, Visakhapatnam 530 014

Sumitra and Bonjit with Class C-82 visiting a boat building yard in Sri Lanka

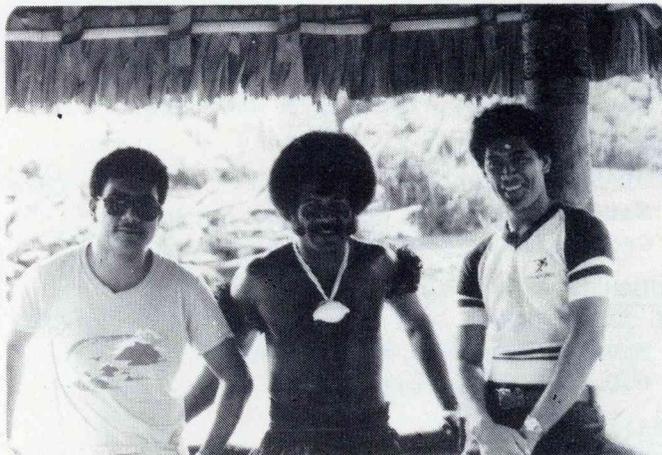


IRAN  
 TAYMOURTAAN, Capt. H. (82)  
 M/V OMMAT, Port & Shipping Organiz.  
 Bandar Abbas

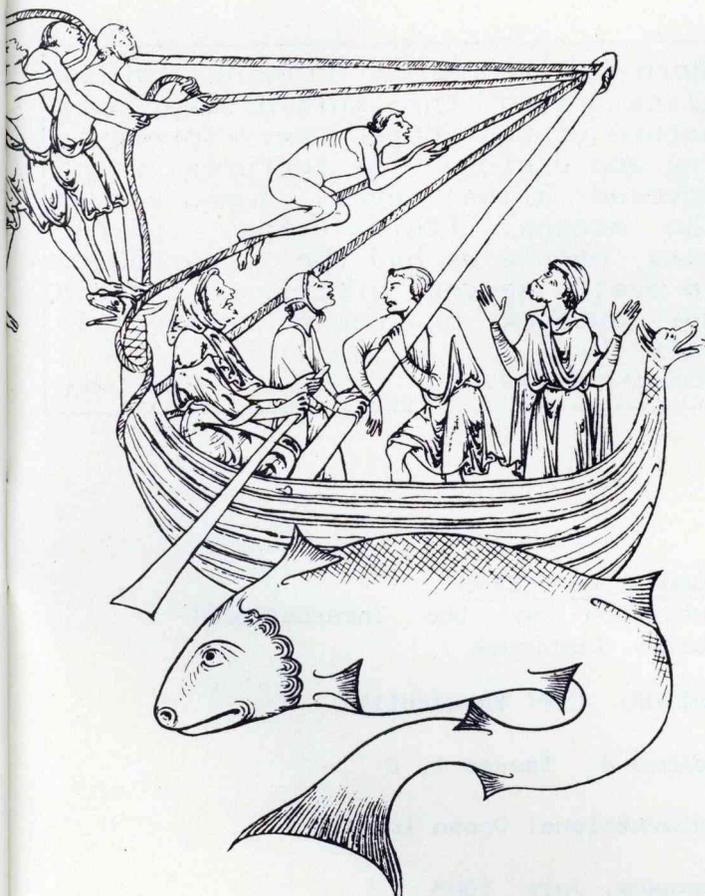
IRAQ  
 MEJBIL AL RAMADAN, Dr. B. (82)  
 Marine Science Centre  
 Basrah University, Basrah

KIRIBATI  
 ONORIO, Mr. B. (83)  
 Assist. Chief, Fisheries Office  
 Box 241, Bikenibeu, Tarawa

MICRONESIA, FEDERATED STATES OF  
 SITAN, Mr. P. (83)  
 Deputy Director, Micronesian Maritime  
 Authority, Kolonia, Ponape



Liva and Ned with guide at Pacific Harbour, Fiji. (Vanderbilt)



NIUE  
 TUKUTAMA, Mr. L.T. (83)  
 Personal Assistant, Secretary to Govt.  
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PALAU  
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 Deputy Director, Palau Maritime  
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 Sr. Fish. Insp., Fisheries Div.  
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 Mariner, Fisheries Division  
 Dept. of Primary Industry, Konedobu

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 Economist, Fisheries Division  
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TONGA

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TUVALU

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Min. of Commerce and Nat. Resources

VANUATU

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Port Vila

VIETNAM, SOCIALIST REP. OF

HA, Miss N.T.T. (82)

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Ministry of Foreign Affairs, Hanoi

HUNG, Mr. T.V. (82)

Nat. Centre for Scientific Research  
NOHYA AO/TU Liem, Hanoi

WESTERN SAMOA

WENDT, Mr. A. (83)

Foreign Affairs Officer  
Ministry of Foreign Affairs, Apia



'Both of us being fishery biologists, found the multidisciplinary nature of the course very interesting and useful. The lectures which covered almost every human use of the oceans, field trips, and the many people we had the opportunity to meet, served greatly to broaden our outlook on ocean related affairs.'

Dianeetha and Leslie

Sri Lanka

ACROSS THE OCEANS

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January, July 1983



Pacem in Maribus

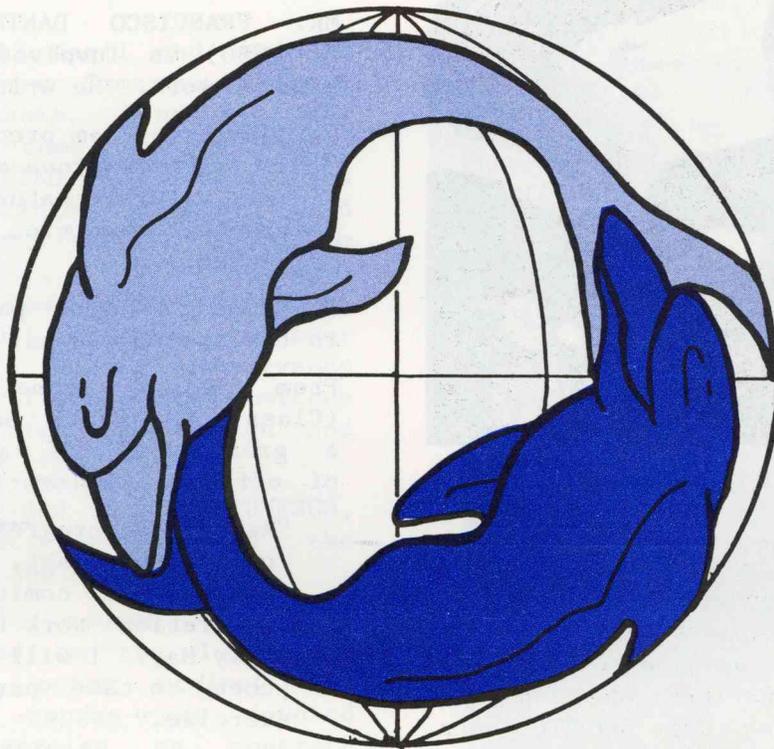
# ACROSS THE OCEANS

The I.O.I. Newsletter

Volume 1

Issue 2

July 1982



It seems impossible but somehow the mid-point of 1982 has just passed and it is time for another issue of Across the Oceans.

During that period many things have happened. Thirty more participants have taken part in Classes A and B of the IOI Training Programme. And very soon the first Class C will open in Goa, India.

It is also good to note that several of the past participants of the Training Programme have written to tell us what new developments are taking place in their countries. You will find more informa-

tion on the inside pages.

Another IOI activity which will soon take place is Pacem in Maribus XI. This is to be held in Mexico City, from 26 to 29 October. The theme is "National Legislation and the New Law of the Sea".

And, of course, there is the 1983 Training Programme which is just about finalized now. That will consist of the usual three courses of Class A, B, and C. But in 1983 we will hold a second Class C Regional Course in the South Pacific on the Solomon Islands.

With all these activities it becomes

even more important to keep in touch with each other. So we hope that you find this issue of Across the Oceans to be of interest and we ask you to keep us, and all the other readers of this Newsletter, up to date on current ideas and developments in ocean management.

All correspondence should be sent to the International Ocean Institute; P.O. Box 524; Valletta, Malta.



Class B participants & Halifax Town Crier [Williamson]

## NEWS FROM PARTICIPANTS

The response to our request for information from the past participants of the IOI Training Programme was very good. Letters describing the latest national developments in ocean management came from participants in Asia, Africa, and South America. Highlights of this correspondence are reproduced here. Any reader of Across the Oceans who wishes to have more detailed information should, of course, write directly to the particular participant. A complete list of names and addresses was printed in Issue 1 of this Newsletter and data concerning the participants of Classes A and B of 1982 are given on pages 11 and 12.

It was a great pleasure to receive a letter from MR. TISSA MUNASINGHE of Sri Lanka who attended Class A in 1981. He wrote that he has been

"appointed by the National Aquatic Resources Agency (NARA) to a Committee to plan an offshore survey around Sri Lanka and I feel full of confidence in assisting the Committee after attending the [IOI] course."

MR. PIYAWAT NIYOMRERKS of Thailand (Class B, 1980) also wrote about new developments in his country. The Treaty and Legal Department, where he works,

"is being charged with the duty to draft Thailand's national legislation for its maritime zones, taking into account all the relevant matters of various subjects specified in the new Convention. To this effect a Committee was set up and was vested with the power to draft such legislation. And I was appointed a member of this Committee."

MR. FRANCISCO DANTAS of Brazil (Class B, 1980) is involved in quite a different kind of work. He writes that

"Nowadays I am preparing a paper dealing with mangrove management which is a very valuable natural resource for the tropical countries which are not landlocked...."

He expects the paper to be completed in the coming months.

From Sierra Leone, MR. ARTHUR AGBAJE (Class A, 1981) writes that there is a great deal of activity in the field of offshore exploration. His letter reads:

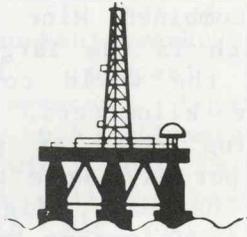
"As regards progress back home, time is running very fast. Mobil Oil Cooperation will be coming out [on] drilling exploration work for oil offshore in early May. I will be joining the ship [then] to take part in the drilling exercise."

Mr. Abgaje, among other past participants, has been very active in promoting the nomination of new candidates for future IOI Training Programmes.

We hope that these participants will keep the Newsletter informed about any new developments in their present activities and that other participants will also write with information on new developments in their national fields of ocean management. All relevant news will be included in the next issue of this publication.

All correspondence should be sent to:

International Ocean Institute  
P.O. Box 524  
Valletta, MALTA



## OCEAN MINING - 1982

For the third year, Class A has taken place in Malta and the Federal Republic of Germany. This year it was an even fuller programme for a trip to Hamburg was included.

The course began on 12 April and included eleven participants from Cameroon, Egypt, India, Iran, Sri Lanka, Tanzania, and Thailand. Lecturers came from UNESCO, the UN Secretariat, UNCTAD, the Universities of California, Cambridge, Hamburg, and Dalhousie, as well as from BP Petroleum Development (UK) Ltd., Petroconsultants SA, the Electronics Commission of India, the Shetland Islands' Lerwick Harbour Trust, the Milford Haven Conservancy Board, the Inter-Union Offshore Oil Committee (UK), and the Institute for Foreign and International Trade Law (FRG).

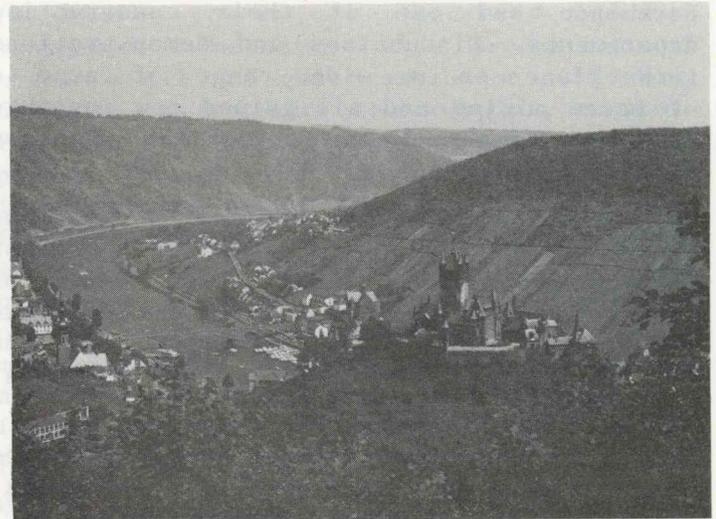
Scholarships were provided by OPEC, UNESCO, the Commonwealth Secretariat, and the Governments of Austria and Mexico.

As in the past, the course opened in Malta and concentrated on the legal and economic aspects of ocean mining. The fifth week of the course was devoted to a simulation exercise on contract negotiation. Participants representing the Authority, the Enterprise, and various elements of a mining consortium, negotiated a contract for a joint venture on mining exploration, research and development, between the Authority and a consortium. The negotiations centred upon financial arrangements, transfer of technology, procurement of services, location of headquarters, applicable law, and settlement of disputes.

The simulation, designed by Dr. G. Winham of Dalhousie University and Dr. W. Hauser of Frankfurt University, once again proved to be very successful in that it familiarised the participants with negotiating techniques and permitted them to review and organize the knowledge they had acquired during the first half of the course.

In addition to the very full programme of lectures, field trips were made to the Malta Drydocks, the Malta Shipbuilding concern, and to the Grand Harbour where a new supertanker dock was recently opened. In order to give the participants an opportunity to enjoy some of the sites of Malta's ancient history, visits were also organised to the Hypogeum, a unique underground temple which dates back to the 3rd millennium BC, to the standing stone temples of Hagar Qim and Mnajdra, and, of course, to the Silent City of Mdina.

After five weeks on the tiny Mediterranean island, the participants flew to Hannover in the northern part of the Federal Republic of Germany. There, for one week as the guests of the German mining company, Preussag AG, the participants had the opportunity to visit institutes, laboratories and business concerns involved in the research and practice of deep ocean mining.



Cochem on the Mosel River, FRG

[Vanderbilt]

One day of this portion of the course was spent in the city of Hamburg, the future site for the International Tribunal for the Law of the Sea. During this very short stay, the programme began with a visit to the Institute of Hydrobiology and Fisheries Research where discussions were held on the investigations of the IHF on the environmental aspects of ocean mining.

This was followed by a visit to the Blohm and Voss Shipyard where advances in offshore structures were demonstrated and participants were able to examine the construction of a massive, offshore rig. From there a quick boat tour of the Port of Hamburg, the largest in the world, and a brief visit to the RV Valdivia, the famous deep ocean mining vessel which has just been purchased by the University of Hamburg.

The afternoon concluded with a stimulating round table discussion on some of the legal aspects of seabed mining with representatives of the Hamburg Authority for Economics, Traffic and Agriculture, the University of Hamburg, and the German Overseas Institute. Finally, the day came to a close with a dinner given at the City Hall by the Senator of Economics, Traffic and Agriculture.

The remainder of the week was spent back in Hannover where participants visited the BGR (the German Federal Geological Survey), Prakla-Seismos GmbH, Preussag's laboratories and supply facilities at Berkhöpen and one of their construction departments. Discussions and demonstrations took place on a wide range of aspects of ocean mining and all gained new insights into the technical and scientific problems of this field.

Then the participants boarded a bus and travelled on to the beautiful town of Aachen where the final four weeks of the course took place at the Aachen Technical University under the guidance of the FIZ (Institute for International Technical and Economic Cooperation).

Here, for three and a half weeks, lectures were presented on mineral economics, heavy mineral placers, marine technology, hydrocarbons, and mineral production development policy. Also included was a short course on the practical and theoretical techniques of pyro- and hydrometallurgy which included the winning of magnesium and titanium dioxide, the extraction of sodium chloride and bromine from seawater and the metallurgy of tin, zinc, copper, and nickel, as well as the treatment of hydrothermal slimes and manganese nodules.

There were also field trips. The first was to the Combined Mine Rheinland, Pit Rossenray, which is the largest underground coal mine in the world covering an area of 155 square kilometers. The 50 square kilometers being mined at present produce 20,000 tonnes per day. Here the participants donned boots, hardhats, lights and oxygen and descended 860 meters to get a first hand look at the most modern mining equipment and techniques in use today. With seams of hard coal up to four meters in thickness and the temperature kept down to 25C with a massive complex of ventilation machinery, it was an unforgettable experience.



Class A participants visiting Pit Rossenray [CMR Staff]

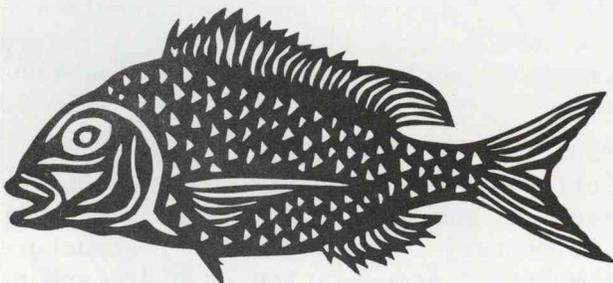
On another day a visit was arranged to the Jülich Nuclear Research Centre and its Institute of Chemistry. Here discussions took place on the Deep Ocean Drilling Project and the resulting work in deep sea sediment composition, source rock analysis for oil and gas, and the detailed geochemical techniques required to provide the necessary data concerning exploratory well drilling sites.

There was also the opportunity to tour the Nuclear Research Centre where the HTGR reactor was developed, and the reactors DIDO and MERLIN are located, and to have a brief overview of the research being conducted there on the many uses of nuclear energy.

A third field trip was a visit to the Rheinische Braunkohlenwerke AG and its Fortuna-Garsdorf opencast mine. This, the largest opencast lignite mine in the world, is 6.5 kilometers long, 4.5 kilometers in width and 350 meters deep. It produces 45 million tonnes of lignite per year, with 84% of its brown coal supplying six power stations. On site down in the mine it was possible to get a good look at the gigantic equipment in use. The bucket wheel excavators weighing 13,000 tonnes, remove 100,000 cubic meters of lignite daily, as they must move two tonnes of overburden to get one tonne of coal. The belt conveyers, which move at 2.3 meters per second, carry the lignite to the power plants and the briquetting factories. Each machine is completely operated by only five persons, but does the work of 25,000. Even standing next to these massive creatures, it was almost impossible to realize that each day they dig out 50,000 cubic meters of sand - which is about the size of one of the larger pyramids of Egypt.

The ten week course culminated on the final day with a symposium, "Ocean Mining 82". Invited experts, representatives of German ocean mining firms, government officials, diplomats, and university professors met to hear the participants present their final report. Comments and discussion followed and the programme came to a close in the evening with a farewell dinner.

And so, after two and a half months of hard work, the participants returned to their home countries, armed with data on every aspect of ocean mining and filled with experiences and memories which will help them to assist their countries develop ever improving policies of ocean management.



## EEZ MANAGEMENT - 1982

Throughout this summer the Class B course on Management of the Exclusive Economic Zone is being held at Dalhousie University in Halifax, Canada. Nineteen participants are attending the course from China, the Congo, Egypt, Haiti, India, Malta, the Philippines, St. Vincent, Sierra Leone, Sri Lanka, Tanzania, Thailand, Yugoslavia, and Zambia.

The aim of the Class B course is to increase awareness of the fact that ocean management adds a new dimension to development strategy; that it requires broad interdisciplinary skills, new institutional and legal infrastructures, and new forms of local, national and international, intergovernmental and non-governmental, organization and cooperation.

The course covers all aspects of resource management including the production of offshore oil and gas, resolution of fishing disputes, aquaculture technologies, monitoring of the marine environment, national policy towards the law of the sea, and international resolution of marine disputes. Through exposure to practical applications as well as theoretical analysis, the programme tries to encourage the emergence of new concepts and approaches to ocean management and strengthen the participants' ability to negotiate in international forums and bilateral negotiations affecting the uses of their ocean space.

Water joins air, land, and sea, and understanding these connections is vital for managers of marine affairs. This course examines the offshore within the total context of water management and the natural flow of the hydrological cycle. Portions of the course are technical, diplomatic, political, economic, and scientific.

In past years Class B has aimed at giving participants an overview of the many and varied aspects of EEZ management in order to help them develop a familiarity with the broad range of issues encountered in marine affairs. This year, however, a further enrichment has been added to the course.

For two weeks during the middle of July, participants will be divided into two groups in order to pursue courses of intensive training. One group will look into the subject of Offshore Oil and Gas. This will include such topics as geophysical exploration methods, and geological fundamentals of land-based drilling operations, drilling procedures, well completions, field production operations, custody transfer, transportation and refining, offshore rig supply and support systems, communications, environmental considerations, offshore contracts, and the role of government agencies.

The second group will concentrate on the problems involved with the Development of Fishing Industries. This will cover fisheries and industrial development, fishing gear and small boat design and development, installation of equipment, boat analysis, fish handling and processing on board vessels, quality control of fish products, small fish plant design and layout, services and infrastructure, resource utilization, hatcheries, aquaculture including oyster farming and mussel projects, fisheries training and field services, and market development.

As in all IOI Training Programmes, the participants of this summer's Class B course have produced reports describing ocean management activities in their home countries. These reports will be published later this year as an IOI Occasional Paper, but excerpts are reproduced here:



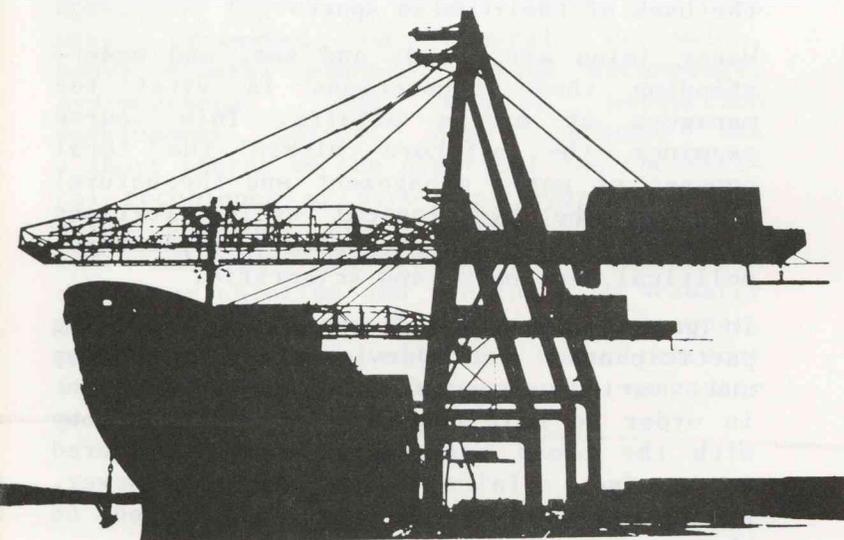
Nanneh, Dianeetha & Sandy at LSI Conference Registration [Williamson]

D.B.L. JOSEPH and D.H. SADACHARAN of Sri Lanka have reported on the recent establishment of the National Aquatic Resources Agency which is "charged with the responsibility of carrying out and coordinating research, development and management activities on the subject of marine resources (and also inland aquatic resources). The Marine Fisheries Division of NARA is responsible for fisheries research and its activities at present are concentrated in the coastal zone. A Division of Marine Geology and Oceanography has recently been set up and a Fishing Technology Division is envisaged. The development of activities in these Divisions is directed towards increasing the domestic fishing capacity and the increased exploitation of the resources of the EEZ."

The Government of Sri Lanka also assigns high priority to petroleum exploration with foreign participation and "has designated the Ceylon Petroleum Corporation as the operational organisation to implement this decision. The CPC is vested with exclusive rights for the exploration of petroleum resources within the EEZ. Accordingly, the CPC offers concessions for the exploration of petroleum within the EEZ to recognised foreign enterprises, private companies, oil exporting consortia, etc."

"Special studies have shown the areas [offered for exploration] to have proven sources and reservoir rocks, and sufficient sedimentary section and structure for commercial accumulation of hydrocarbon."

"All concessions mapped for exploration, except two, lie within the territorial limits and already about seven blocks have been given out to foreign enterprises."



"Negotiations are underway between Sri Lanka and India for joint exploration of oil in their territorial waters in the Indian Ocean. Possibilities of joint ventures in mineral mining in the deep sea are also under consideration."

In the Caribbean, "the policy [of the Government of St. Vincent and the Grenadines] on EEZ management is one of collective management. This reduces...costs and facilitates international aid which is certain to be required to provide the capital and technical assistance for effective management."

With the establishment of the EEZ, St. Vincent and the Grenadines have recognised the need for management capabilities in the fields of biological and marine research, resource management, and surveillance and enforcement. With this in mind, MR. KERWYN MORRIS, the Government Fisheries Officer who is attending the 1982 Class B course in Canada, took part in "a workshop in Survey Methodologies at the Institute of Marine Affairs in Trinidad and Tobago. Work in this subject area will continue for at least the next three years. On surveillance and enforcement, a regional approach is the official policy and there are plans for a regional Coast Guard. Some input...has already been made with the acquisition of a Coast Guard craft from England. Two smaller craft are under construction at a local shipyard and should be launched in two months time. In addition to these craft the Government is negotiating with an Asian country for two dual purpose fishing/patrol craft."



Oyster culture at Sambro Head, Canada

[Vanderbilt]

Haiti has also been affected by the declaration of a 200 mile EEZ and has had a strong interest in UNCLOS III. MR. CARL MEVS, Minister Consellor of the Permanent Mission of Haiti to the United Nations and a participant in the 1982 Class B course, wrote: "The provisions of the Law of the Sea Convention have also provided Haiti with the necessary knowledge to put in place the adequate mechanisms to determine its maritime boundaries, the continental shelf, to effect a fisheries law, and to initiate research on natural resources." Haiti has had successful bilateral negotiations based on the median line principle, with Cuba and Colombia and now hopes to negotiate also with its other neighbouring countries, Jamaica, the Bahamas, and the Dominican Republic.



### CLASS C - 1982: GOA, INDIA

The first Class C course on regional ocean management will take place in Goa, India, from 4 October to 10 December 1982. This course is on Marine Resource Management and Conservation in the Indian Ocean Basin and Adjacent Seas.

The recently adopted Convention on the Law of the Sea creates a New Order for the oceans. It will affect all uses and all users of the seas. It gives new rights to and imposes new responsibilities on States, and changes the development perspectives of many of them. It poses new challenges and requires new concepts and skills.

The purpose of the IOI Class C is to make a modest contribution towards enabling developing countries in the region of South and Southeast Asia to acquire these concepts and skills which they will need to benefit from the new Law of the Sea and to integrate marine resources and ocean management into their over-all development strategy which may be greatly enhanced by adding this new dimension.



Class B Participants - India & China (Rao)

The purpose of the IOI Class C is to make a modest contribution towards enabling developing countries in the region of South and Southeast Asia to acquire these concepts and skills which they will need to benefit from the new Law of the Sea and to integrate marine resources and ocean management into their over-all development strategy which may be greatly enhanced by adding this new dimension.

Ocean management is a complex, multidisciplinary field. The ocean manager must be at home both in the natural and in the social sciences. This course therefore is broadly comprehensive and proposes a systemic approach, considering the Indian Ocean area as an ecological whole, and all ocean uses in their interaction.

Such a view necessarily will enhance international cooperation, both at the regional level and at the level of the North-South Dialogue. Cooperation in the peaceful uses of the oceans, with due consideration to ecological integrity, will enhance both development and peace.

This IOI Training Programme is being held in cooperation with the Indian National Institute of Oceanography, the Ministry of External Affairs and the Department of Ocean Development of the Government of India, as well as with the United Nations Environment Programme and the Food and Agriculture Organization of the UN.

Twenty-five scholarships have been provided by the Government of India, CIDA (Canada), the Commonwealth Secretariat, and UNEP.

A synopsis of the ten week course is given here:

Week 1: Oct 4-9

General introduction. The role of the oceans in human life, culture, and economics. The Common Heritage of Mankind. The significance of the new Law of the Sea. The Indian Ocean Basin and adjacent seas. Participants' presentations on marine interests and policies in their countries.

Week 2: Oct 11-16

The management of living resources, with particular emphasis on the scientific basis of fisheries; fishing technologies; the economics and sociology of fishing; the development of aquaculture and mariculture; and specific problems such as the management of mangrove swamps and coral reefs.

Week 3: Oct 18-23

Environment and development: The impact of pollution from land-based sources; from ship-borne sources; from seabed mining; technological, economic, social, legal, and institutional aspects of pollution control and prevention; integrating environmental policy into development strategy.

Week 4: Oct 25-30

The management of nonliving resources. The exploration and exploitation of mineral resources both near-shore and in the deep sea; the development of an indigenous hydrocarbon industry.

Week 5: Nov 1-6

(a) Navigation and shipping: technological, economic and ecological aspects; straits management; impact of tanker and container shipping; the development of integrated systems of transportation. (b) Coastal management; hydrography; estuary dynamics; interactions between fresh-water and sea-water systems; water management; the extraction of energy from the oceans; tourism.



Week 6: Nov 8-13

Marine scientific research. The role of research in management. Instrumentation. Cost of oceanographic research; levels of research: exploration, evaluation, monitoring; country profiles; regional cooperation; the consent regime.

Week 7: Nov 15-20

Planning and Policy: structure and functions of an Ocean Department: interactions with other parts and levels of Government; with scientific institutions; with industry; with international institutions at the regional and global level.

Week 8: Nov 22-27

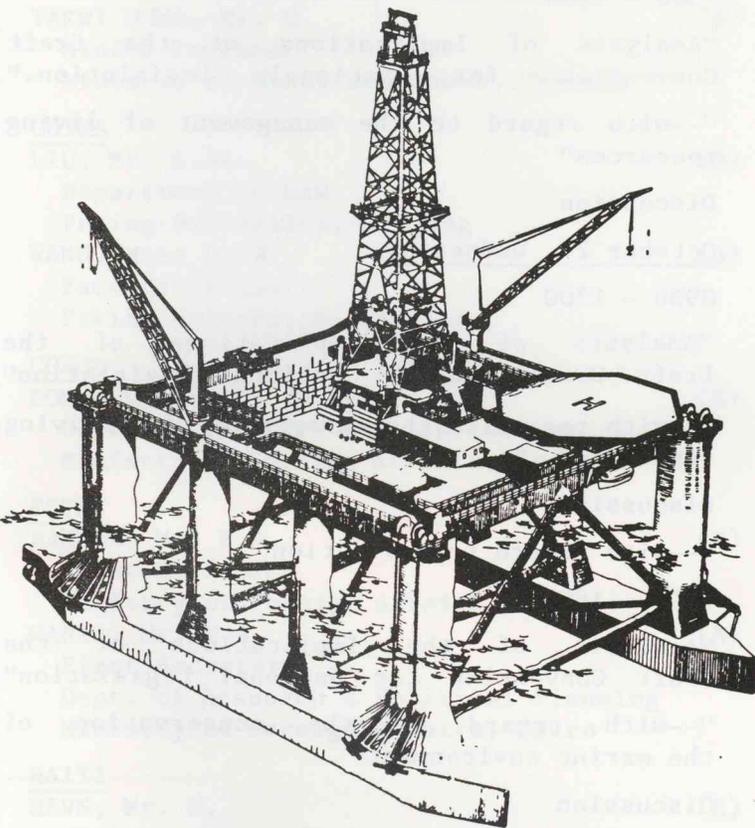
Field trip to: Hyderabad, Cochin, Trivandrum, Colombo, the Maldives, and Bombay.

Week 9: Nov 29 - Dec 4

Field trip (continued).

Week 10: Dec 5-10

Bombay. Visit to oil exploration and production platforms. Final symposium.



"...and I feel full of confidence in assisting the [National Aquatic Resources Agency] committee after attending the [Ocean Mining] course."

Tissa Munasinghe

SRI LANKA

CLASS C - 1983: SOUTH PACIFIC

In addition to the already planned Class C course to be held in Algeria in 1983, a second regional course will be held in the South Pacific from April to June.

This Class C course is designed for decision-makers concerned with ocean management in the South Pacific. The course will be open primarily to mid-career civil servants who have a degree, or who work in a scientific institution, or carry a major responsibility in foreign affairs, natural resources or fisheries. Special consideration will also be given to nominees from very small countries where available manpower at the higher levels is in short supply.

While it is agreed that fisheries is the natural resource of more immediate interest and of greatest concern to most of the island countries in the South Pacific, the need is also felt to take an integrated approach to the special problems of ocean management in this region. For this reason, attention will also be given to non-living resources, trade, the multiple uses of ocean space, and the integration of EEZ management into national and international development strategies.

This IOI Training Programme will be held in cooperation with the Forum Fisheries Agency (Solomon Islands), CIDA (Canada), and the Commonwealth Secretariat. The course will be located at the University of the South Pacific.

More details concerning this Class C course will be included in the next issue of Across the Oceans.

"I have really put the Institute on the map. Recently I gave a lecture to members of the Institute of Mining and Metallurgy...on Ocean Mining and they were very much interested."

Arthur Agbaje

SIERRA LEONE



Mexican sculpture in Aachen, FRG

[Vanderbilt]

## PACEM IN MARIBUS XI

This autumn the International Ocean Institute, in cooperation with the Ministry of Foreign Affairs of the Government of Mexico, will hold its annual convocation, Pacem in Maribus XI. Pacem in Maribus convocations are gatherings of economists, scientists, technicians, lawyers, diplomats, international civil servants, and other interested persons from all parts of the world. They come together for interdisciplinary discussions of international ocean affairs, centred on the concept of ocean space as a common heritage of mankind.

This year the special area of discussion will be "National Legislation and the New Law of the Sea." The new uses of the oceans, together with the New Law of the Sea, are generating new needs in the field of domestic legislation and infrastructure. Old laws have to be expanded to cover new activities: disparate to conflicting sectors have to be harmonized; Ministries for Ocean Affairs or Ocean Departments have to be created; and interactions between national, regional, and global regimes have to be articulated. The conduct of ocean affairs strikingly illustrates the interdependence between domestic and foreign policy that characterizes contemporary history and provides the background on which a New International Economic Order must be conceived.

The meeting will take place at the Conference Hall of the Ministry of Foreign Affairs from 26 to 29 October. The draft agenda is produced here:

### NATIONAL LEGISLATION AND THE NEW LAW OF THE SEA

October 26, Tuesday

1000 - 1200

Opening Ceremony: Jorge Castañeda  
Mexican Foreign Minister

Keynote Address: HE Dr. B. Zuleta  
Under Secretary General  
United Nations Secretariat

Opening Remarks: Ambassador L. Yaker  
President, IOI Board of Trustees

Opening Remarks: Prof. E. Mann Borgese  
Chairman, IOI Planning Council

Introduction: Minister A. Székely  
Deputy Permanent Representative of  
Mexico to the United Nations, Geneva

"The Role of State Practice in Shaping  
the Law of the Sea: Past and Present"  
Dr. Reynaldo Galindo Pohl, El Salvador

1500 - 1800

"Analysis of Implications of the Draft  
Convention for National Legislation."

"--with regard to the management of living  
resources"

Discussion

October 27, Wednesday

0900 - 1300

"Analysis of the Implications of the  
Draft Convention for National Legislation"

"--with regard to the management of nonliving  
resources"

Discussion

"--with regard to navigation"

1500 - 1800

"Analysis of the Implications of the  
Draft Convention for National Legislation"

"--with regard to the conservation of  
the marine environment"

Discussion

"--with regard to scientific research"

October 28, Thursday

0900 - 1300

"National Legislation and the Building of National Institutional Infrastructure"

Discussion

"National Legislation and the National Development Plan"

Discussion

1500 - 1800

"National Institutional Infrastructure and its Interactions with International Organizations"

"--at the regional level"

"--at the global level"

October 29, Thursday

0900 - 1300

"The Mexican Model"

Discussion

"Feasibility of a Model Piece of Legislation for Developing Countries"

1500 -

Summary and Conclusion

Sightseeing

Banquet

### 1982 PARTICIPANTS: CLASSES A & B

Listed here are the names and addresses of those participants who have attended the 1982 Classes A and B. Those who take part in Class C this year will be listed in the next issue of this Newsletter.

#### CAMEROON

- SALLEY MEJENE, Mr. P. (A)  
Engineer Geologist  
Ministry of Mines and Power, Yaounde
- TAKWI MUMA, Mr. C. (A)  
Mining Engineer  
Ministry of Mines and Power, Yaounde

#### CHINA

- LIU, Mr. G.-L. (B)  
Department of Law  
Peking University, Beijing
- WANG, Miss C.-W. (B)  
Faculty of Law  
Peking University, Beijing

#### CONGO

- ROMUALD, Mr. M. de M. (B)  
Dept. of Treaties and Conventions  
Ministry of Foreign Affairs, Brazzaville

#### EGYPT

- RAHMAN, Mr. E.A. (B)  
First Secretary  
Ministry of Foreign Affairs, Cairo
- WANIS, Mr. M.A. (A)  
First Secretary  
Dept. of Research & Political Planning  
Ministry of Foreign Affairs, Cairo

#### HAITI

- MEVS, Mr. C. (B)  
Minister Counsellor  
Permanent Mission of Haiti to the UN  
New York, New York, USA

#### INDIA

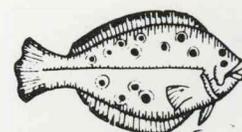
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Dolphin Gate, Halifax

[Williamson]

"I would like to state here that the knowledge which I gained from the IOI course in Malta 1980 has helped me in giving the best contribution to the work of the [Thai Government] committee."  
Piyawat Niyomrerks THAILAND

ACROSS THE OCEANS

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July 1982



Pacem in Maribus

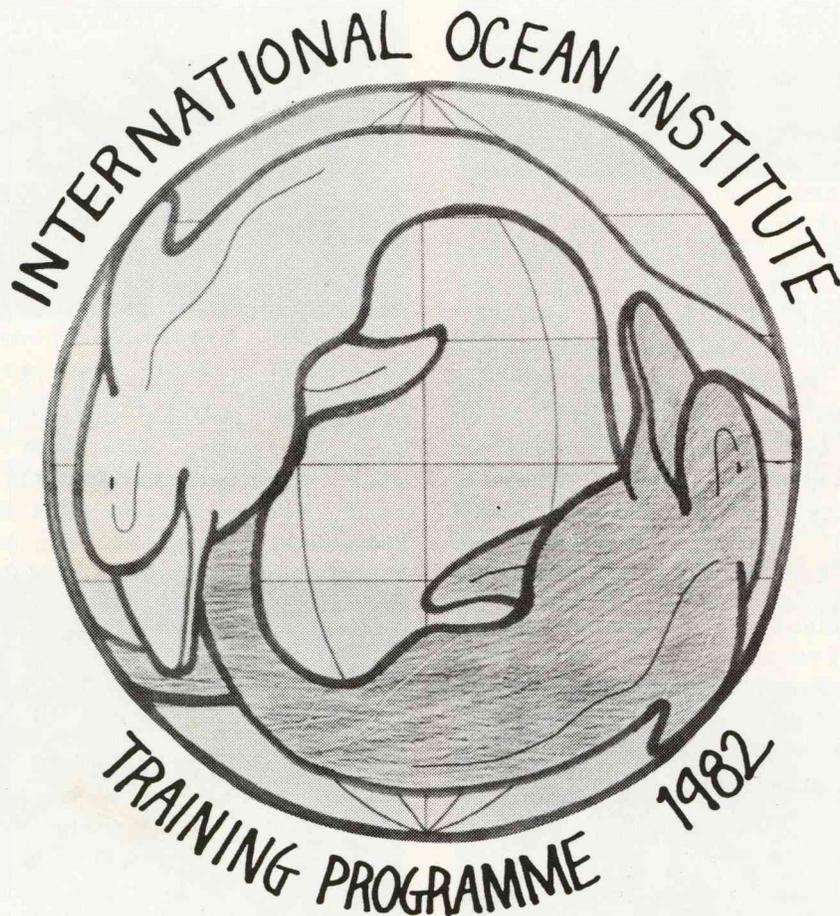
# ACROSS THE OCEANS

## The IOI Newsletter

Volume 1 Issue 1

International Ocean Institute

January 1982



With the beginning of 1982 the International Ocean Institute moves into the third year of its Training Programme in the Management and Conservation of Marine Resources.

Over the past two years many, many people have taken part in these courses. And the number continues to grow. With this in mind, we have decided to issue Across the Oceans, an IOI Newsletter.

This is the first issue. We hope to put out two or three issues each year. The main idea behind Across the Oceans is, naturally, communication. We would like to maintain contact with those people who have participated in the IOI Training Programme, and we would like to help them keep in touch with each other!

More specifically we would like to keep abreast of developments in the field of ocean management in all developing countries. But for that we need help. We would appreciate it, therefore, if each one of the Participants would write to us periodically and tell us about his or her current activities and about any new developments in the field of management of marine affairs in his individual country.

We will, in turn, pass this information on to the other Participants, through this Newsletter, thereby helping everyone to keep up to date on new ideas and developments in ocean management.

All correspondence should be sent to the International Ocean Institute; P.O. Box 524; Valletta, Malta.

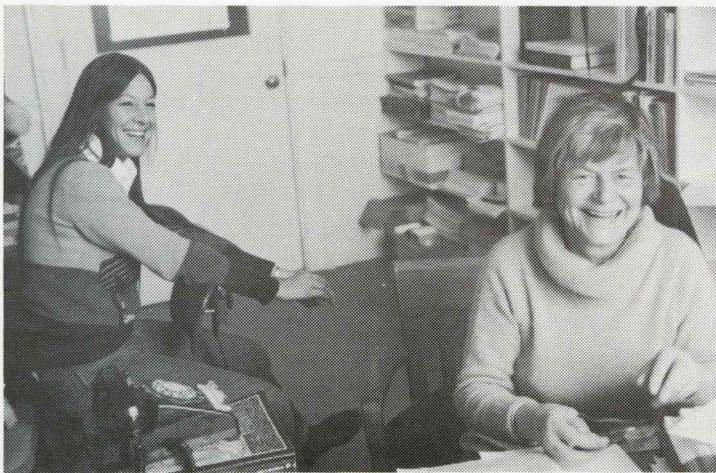
# INTERNATIONAL OCEAN INSTITUTE

## Structure

The International Ocean Institute (IOI) is an independent, nongovernmental, international organisation. Its activities are governed by a Board of Trustees, a Planning Council, and a Director and his staff. In addition there are project directors for individual projects, associates and consultants, as well as two Editors and a Board of Editors for the Ocean Yearbook. Operations are carried out in Malta, Halifax (Canada) and Chicago (USA).

## The Governing Bodies of IOI

The Board of Trustees consists of the following distinguished personalities: Layachi Yaker (Algeria), President; Zakaria Ben Mustapha (Mayor of Tunis, Tunisia), Elisabeth Mann Borgese (Dalhousie University, Canada), Jorge Castañeda (Minister for Foreign Affairs, Mexico), Gunnar Myrdal (Sweden), Aurelio Peccei (President, Club of Rome), Jan Pronk (UNCTAD), Roger Revelle (University of California, San Diego), Mario Ruivo (Secretary, IOC), Hernan Santa Cruz (Chile), Anton Vratuša (Centre for the Study of Public Enterprises in Developing Countries, Yugoslavia).

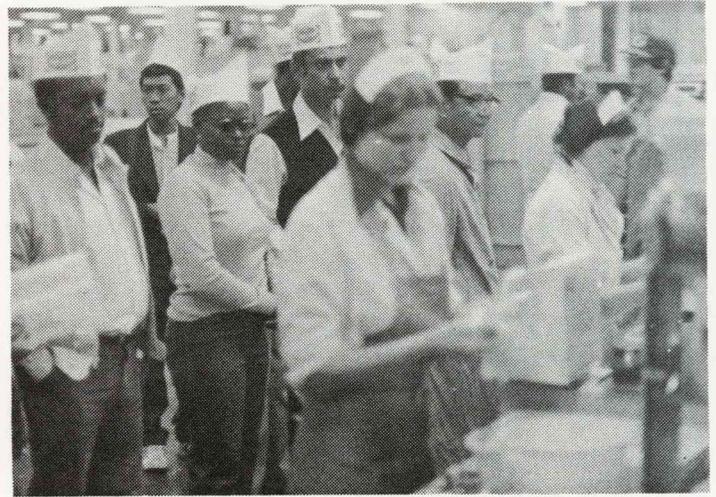


The Planning Council is made up of another group of public opinion leaders: Elisabeth Mann Borgese, Chairman (Dalhousie University, Canada), K. Bhagwat Singh (UN Secretariat), Silviu Brucan (University of Bucharest, Romania), Maxwell Bruce, Q.C. (Canada), Thomas S. Busha (IMCO), Edwin J. Borg Costanzi (Malta), René Jean Dupuy (College de France), Jan van Ettinger (RIO Foundation, Netherlands), Reynaldo Galindo Pohl (El Salvador), J. King Gordon (Canada), G.L. Kesteven (Australia), Anatoly L. Kolodkin (Research Institute of Maritime Transport, USSR), Frank LaQue (USA), Arvid Pardo (University of Southern California; Malta), Jacques Piccard (Foundation for the Protection of Seas and Lakes, Switzerland), Christopher Pinto (Chairman, International Law Commission; Sri Lanka), Egerton Richardson (Ministry for External Affairs, Jamaica), Lord Ritchie-Calder (UK), V.K.S. Varadan (Geological Survey of India), Joseph Warioba (Attorney General, United Republic of Tanzania), Alexander Yankov (Ministry for Foreign Affairs, Bulgaria).

## THE IOI TRAINING PROGRAMME

Over the past two years, the International Ocean Institute has developed a Training Programme on the Management and Conservation of Marine Resources for participants from Third World countries. The purpose of the Programme is to deepen the understanding of the ever increasing importance of the oceans and their resources in world politics and world economics; to assist developing countries in the formation of a core of decision-makers fully aware of the complex issues of ocean management; and to maximize benefits to be derived from the proper integration of ocean management into national and international development strategy.

During the first two years, the Programme was divided into two parts. Class A was devoted to ocean mining; Class B to Economic Zone management. Both courses were conceived in a broadly interdisciplinary way and covered all aspects -- from technology and economics to administration, management, national and international law and institutional infrastructure. Each course lasted 10-12 weeks.



Highlights of Class A included a Simulation Exercise, designed by Canadian and German experts, on negotiating a joint venture with the Seabed Authority. Participants assumed the roles of representatives of the Authority, of a consortium, and of a group of developing countries with different interests. Of special interest also was the Participants' involvement in the actual processing of manganese nodules and analysis of their metal content. During the field trip arranged by the German mining company Preussag AG, Participants had the rare experience of descending more than one kilometer below the surface of the earth into one of the world's largest salt and potash mines where the temperature of the walls approached 65 degrees Centigrade.

## IOI ACTIVITIES IN 1982

As in 1980 and 1981, Class A on Ocean Mining and Class B on EEZ Management will once again take place.

Starting in 1982, however, a third course, Class C, will be added to the Programme. While Classes A and B are organised on a global basis, Class C will focus on the needs and concerns of one particular region. And the participants will all be drawn from that region.

As in 1981, Class A will be held in Malta and Germany. The first part of this course on Seabed Mining will be devoted to the economic, managerial and legal aspects of ocean mining. This will start in Malta on 12 April. The second part of the course will take place in the Federal Republic of Germany, and will once again be organised in cooperation with the Aachen Technical University, which contributes to this course its unique technical infrastructure and expertise. Also included, while in Germany, is the field trip to the mining company, Preussag AG, in Hannover.

"Last year's Programme was a valuable experience for me, and I have already had the opportunity of applying some of the lessons learnt at the course to the field back in Pakistan."  
Mohammad Saeed Akhtar, Pakistan

The Programme is completely updated each year, and current developments in the Law of the Sea, the changing scene of world economics, and new scientific discoveries that may affect the development of ocean mining, are fully taken into account.

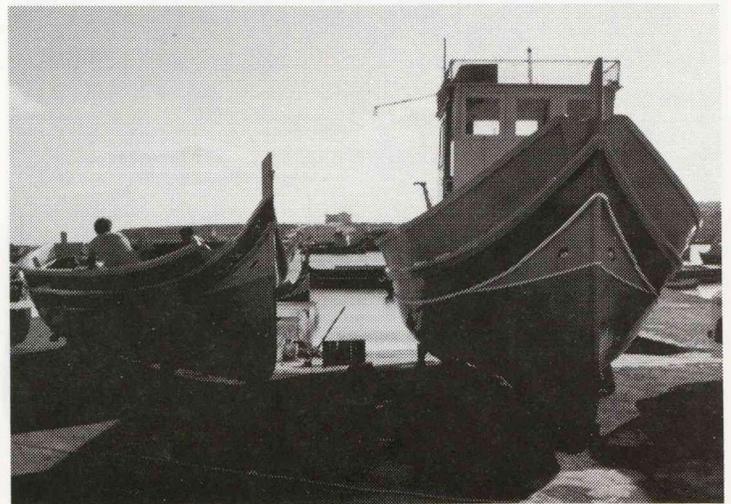
Class B is being organised, as last year, in cooperation with Dalhousie University in Nova Scotia, Canada. The aim of this course, which will take place in the summer months, is to increase awareness of the fact that ocean management adds a new dimension to development strategy; that is requires broadly interdisciplinary skills, new institutional and legal infrastructures, and new forms of local, national and international, intergovernmental and nongovernmental, organisation and cooperation.

The IOI is currently working on arrangements with local institutions for the addition of an optional technical work programme to the course. If arrangements can be completed for this year, three optional classes would be offered in marine geology,

"The Halifax experience was a very useful one indeed and each day at work I see the fruits of that endeavour. Sometimes I wonder how I did [my job] before."  
Miss G. Guy, Trinidad and Tobago

oil drilling technology, and fisheries/aquaculture technology respectively. The courses would be given Thursdays and Fridays, 6 hours a day (for a total of 120 hours), while the interdisciplinary foundation course would be concentrated on the first three days of each week.

"From the comments of Participants I judge that the Programme is not only a practical and valuable training course, but it should also help to establish mutually beneficial contacts between Canadians and policy makers in developing countries."  
W.A. MacKay, Dalhousie University



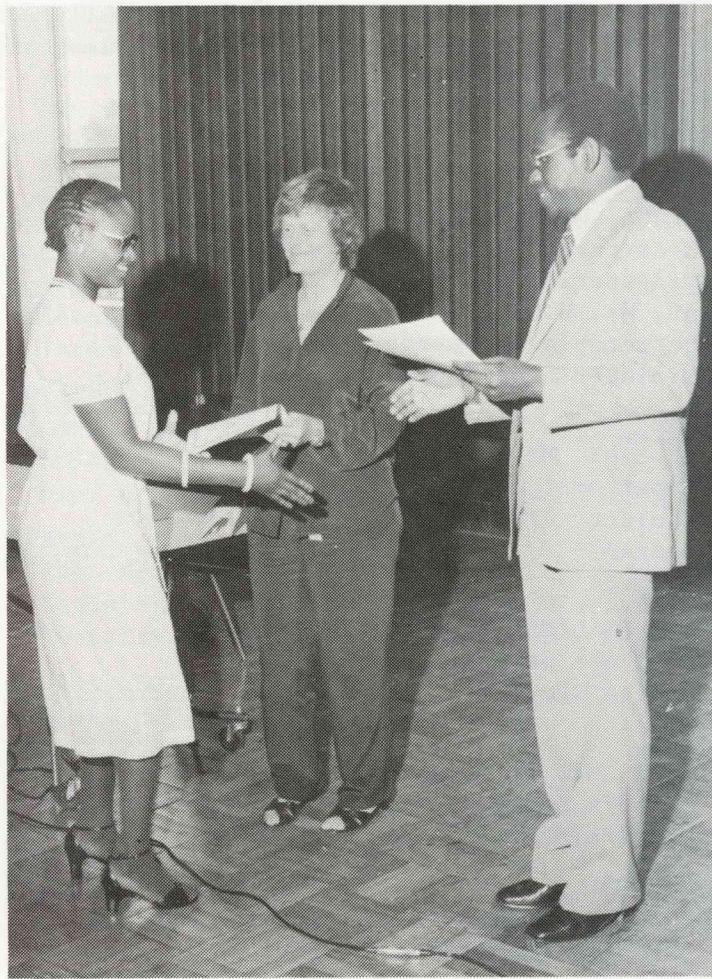
The Class B course is conducted from a systems-analytical point of view, emphasizing linkages and conflicts between ocean uses, both in the short-range and the long-range perspective. It tries to encourage the emergence of new concepts and approaches in the participants' minds and to strengthen their ability to negotiate in international fora and bilateral negotiations affecting the uses of the oceans.

"For me, a Nigerian delegate to UNCLOS, the eight weeks of the real training broadened my horizon of seabed marine resources and gave me a stronger 'feel' of the options in the exploitation of these resources."  
H.T. Molokwu, Lagos, Nigeria

Class C will take place in Goa, India between October and December. This course will deal with all aspects of ocean management in South and Southeast Asia. Particular attention will be given to such specific topics as pond culture, cage culture, pearl farms, seaweed beds, mangrove swamps, and coral reefs.

There will be field trips to Kerala, Sri Lanka, and the Maldives in order to get first-hand impressions of aquaculture practices and of local and regional research institutions and extension services. A research ship will be at the disposal of the participants for a few days.

"The Training Programme...proved invaluable to the accentuation of my understanding of the intricacies and economic importance of ocean space especially in fostering economic development and growth within developing nation states."  
C.L. Harvey, Georgetown, Guyana



"As we look forward to the establishment of the Exclusive Economic Zone when the Law of the Sea Convention goes into force, we hope that we can apply this new type of training to the effective and rational management of our marine resources."  
T.W. Sherman, Republic of Liberia

With the Law of the Sea negotiations drawing to an end, ocean management and the resources of the sea are going to play an ever increasing role in national development strategy and in the changing structure of international economic relations. It is important that developing countries join this new phase of the industrial revolution from the beginning. This Programme is meant as a contribution to a better understanding of the complex issues involved.

List of Participants in the IOI Training Programme during 1980 and 1981.  
The letters "A" and "B" following the name indicate which programme each  
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## THE OCEAN YEARBOOK

The most important and most ambitious publication of the IOI has been the Ocean Yearbook which is published jointly with the University of Chicago Press. This is a collection and review of the resources, ecology, technology, and strategic uses and importance of the world's oceans. The compilation of such data and their interaction, so as to present a comprehensive integrated view of ocean affairs is the Institute's goal in this publication. This publication is also being used as a textbook in the IOI Training Programme.

Ocean Yearbook 3, which will be available in early 1982, will include the following articles:

"The Draft Convention" by E. Mann Borgese;  
"FAO's EEZ Programme: Helping to Build the Fisheries of the Future" by Kenneth Lucas and Tony Loftas;  
"Ocean Energy and the Hydrogen Denominator" by Harvey Silver-

stein;  
"Metalliferous Sediments of the Seabed: The Atlantis-II Deep Deposits of the Red Sea" by Erich Blissenbach and Zohair Nawab;  
"Monitoring and Surveillance: Navigation" by Thomas Busha;  
"The Surveillance and Control of Navigation in the New Law of the Sea: A Comment" by Edgar Gold;  
"The Ocean Basins and Ocean Water" by A.T. Anderson;  
"Regional Marine Resources Development: Growth by Necessity" by Lee Kimball;  
"Oil Pollution of the Sea: Excerpts from the ACOPS Annual Report 1980" by the Advisory Committee on Oil Pollution of the Sea;  
"The Caribbean Experience" by Peter Thacher and Nikki Meith;  
"Coastal Zone Management: A Comparative Analysis of National Programmes" by James Mitchell;  
"Military Aspects of the Exclusive Economic Zone" by Michael A. Morris;  
"The Southern Ocean in the 1980s" by Barbara Mitchell;  
"The Emerging Concept of Midocean Archipelagos" by Phiphat Tangsubkul and Daniel J. Dzurek.

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### ACROSS THE OCEANS

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