

PORTS *and* HARBORS

Jan.-Feb., 1982 Vol. 27, No. 1-2



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Denmark

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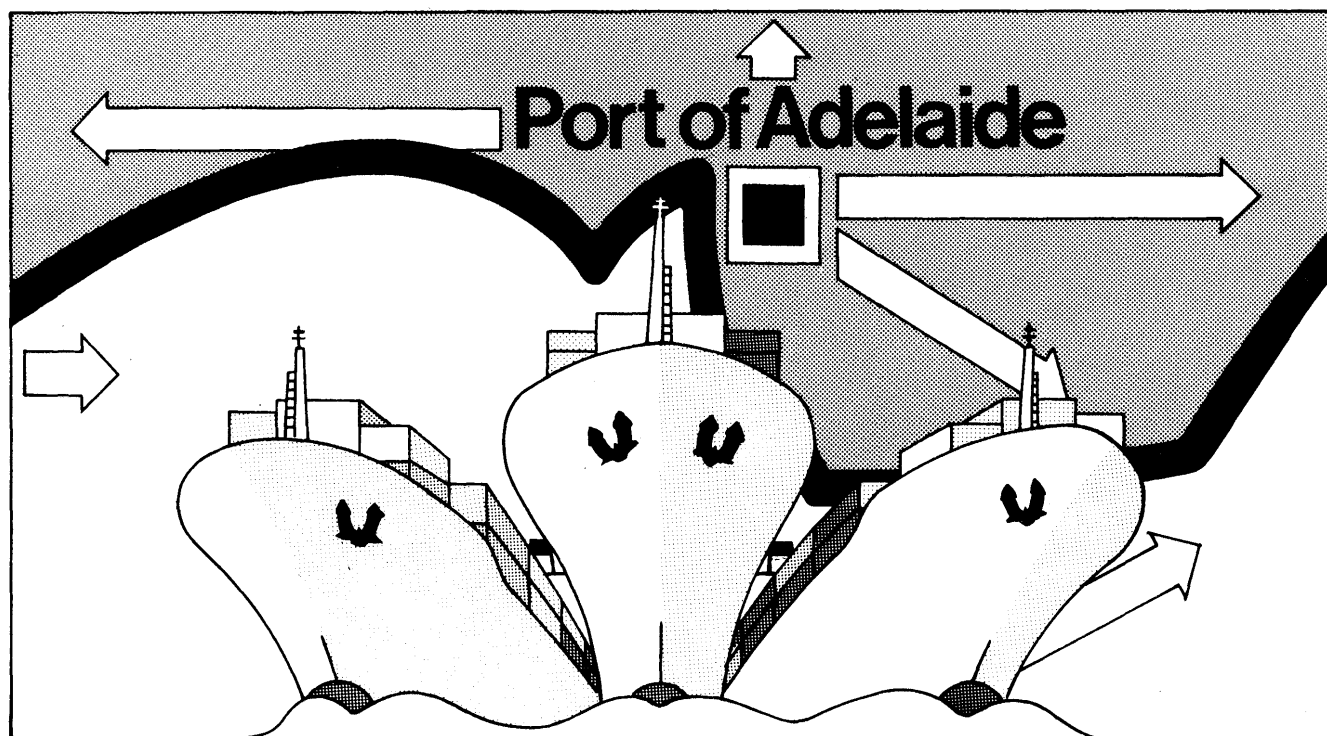
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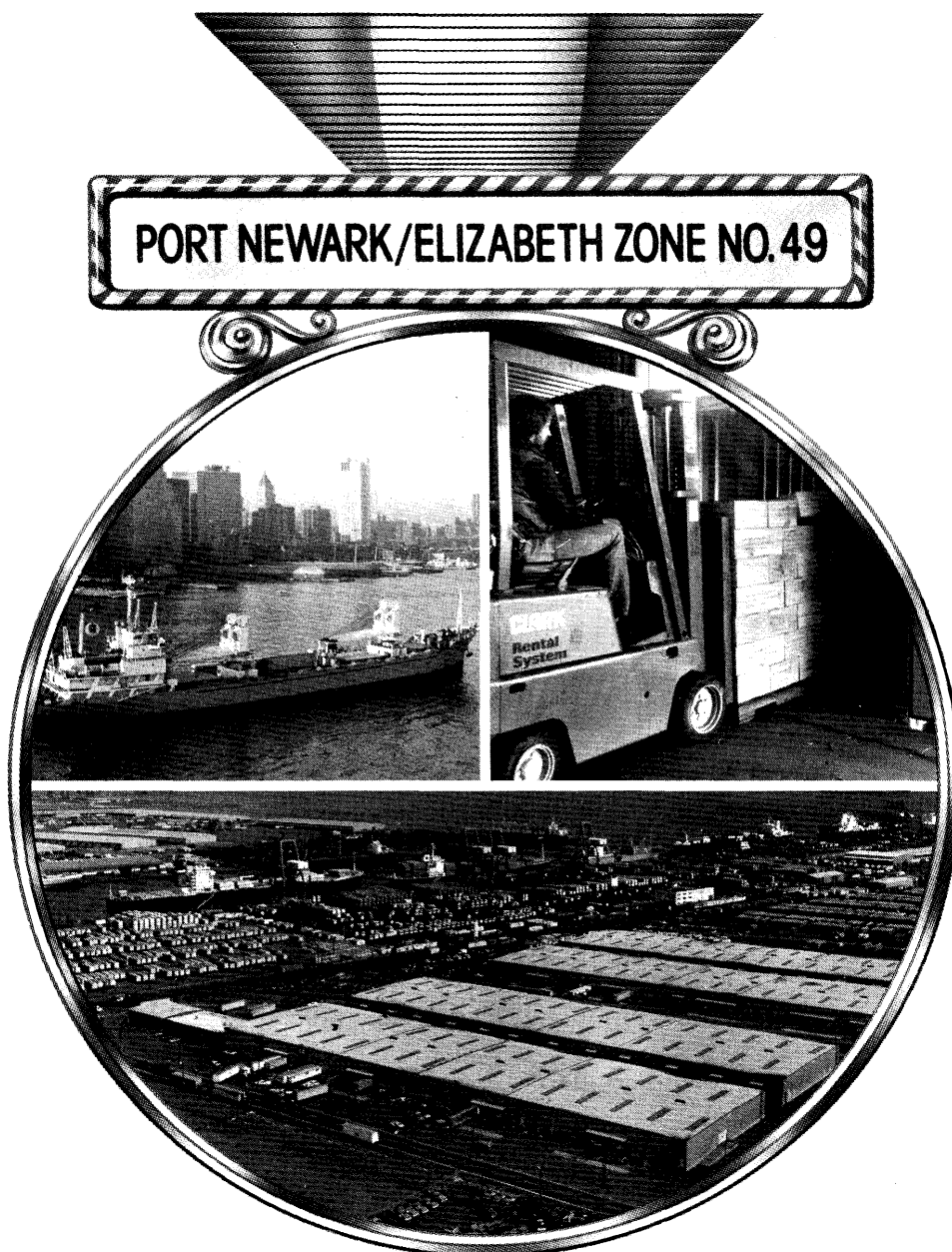
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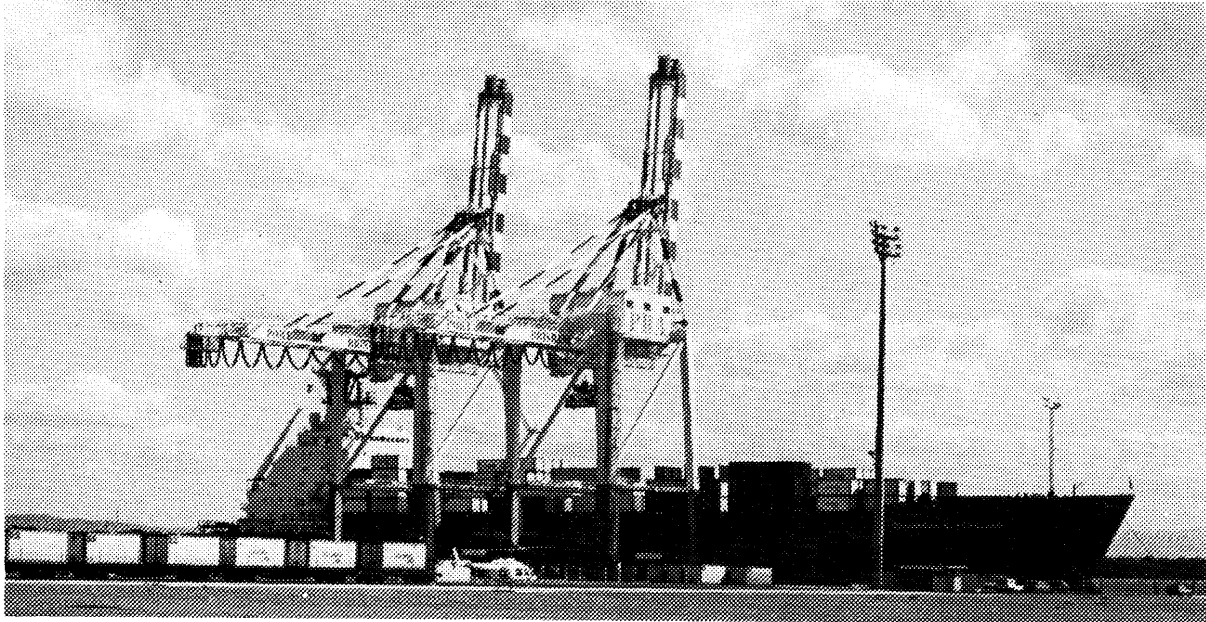
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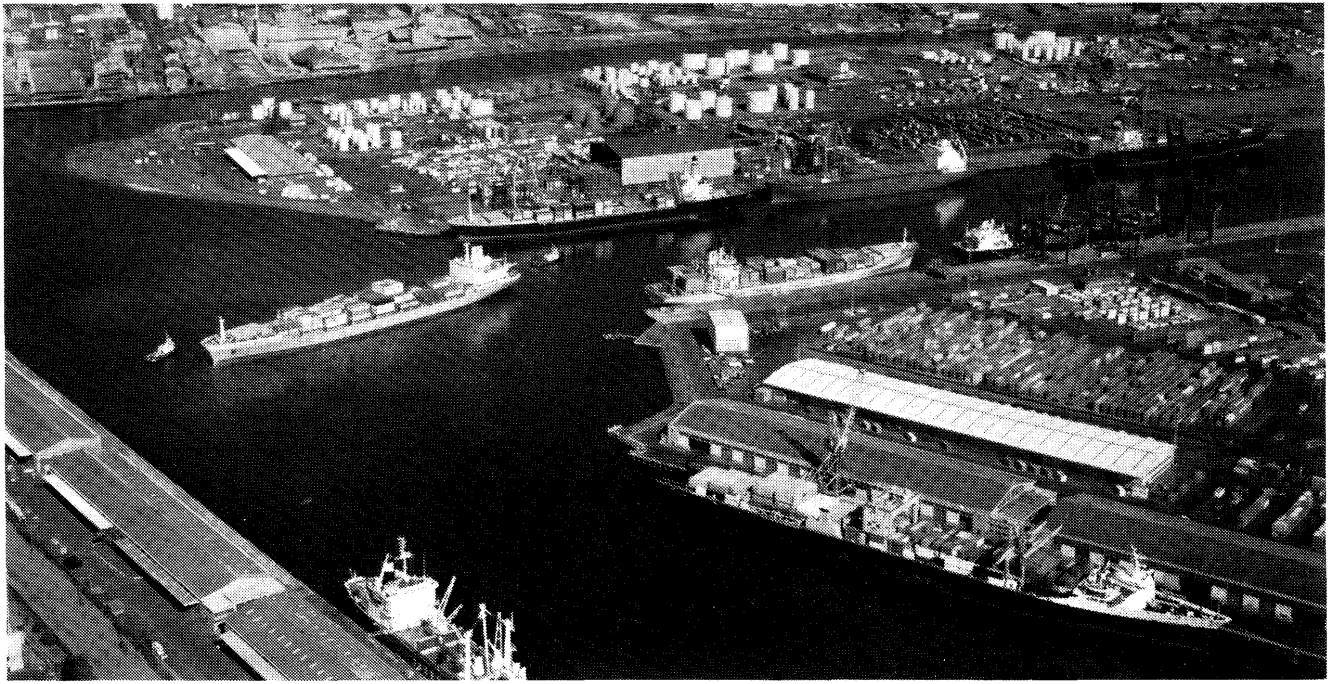
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The Port of Melbourne serves 38% of Australia's population. Nearly 25% of Australia's trade passes across its docks. In the past 20 years general cargo has increased by 80%. It is estimated this trade will increase by a further 80% by the year 2000.

Statistics 1980/81

Revenue (AU dollars)	45 million
Total Trade (tonnes)	18,690,000
Container Trade (tonnes)	9,233,000
Container Trade (TEU's)	508,425
Ship Calls	2,330
Gross Tonnage of Ships	25,143,197
Assets (AU dollars)	326 million

World Trade Centre

One of the major projects being developed by the Port of Melbourne is the World Trade Centre. It is situated on the fringe of Melbourne's Central Business



Melbourne's World Trade Centre silhouetted against the skyline and clearly illustrating its close proximity to the Central Business District.

District. The complex will be completed in 1983 and will house specialists in every aspect of international trade.

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international trade headquarters.

For information:

**The Secretary,
Port of Melbourne
Authority,
G.P.O. Box 2239T,
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IAPH announcements and news

New Year's Messages



From
Mr. A.S. Mayne
President

By the time you receive this magazine we will be into the new year and therefore it is appropriate that as President of the Association I extend to you the best of good wishes for 1982.

The circumstances at present throughout the world are such that this coming year promises to be a testing one and perhaps the best the ports can hope for is one of consolidation.

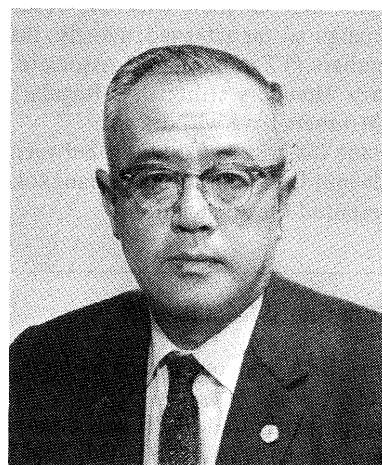
Our next meeting is early June, 1983 at Vancouver. Meantime some Committees have already commenced their two year vigil of the many problems ports have to face.

In the coming May the Officers, and the Executive Committee plus many Internal and Technical Committees will meet in Aruba and deliberations there will set the pattern for the next Conference.

Membership of the Association is a vital matter and it is only through increased membership that the Association can continue its battle for ports.

We know that normally the economic lifeblood of any nation is through its ports and therefore as President of the Association I earnestly urge you to make a new year resolution that you personally will introduce one new member to our next Conference. I know it is a tall order and although we represent more than 70 nations and 220 ports around the world I believe nothing is beyond determination.

All the best to your families and much goodwill to all members.



From
Dr. Hajime Sato
Secretary General

It is with great pleasure that I extend to you, through this journal, best wishes for the New Year.

For IAPH members, the 12th Conference marking the 25th anniversary of the Association held last May, in Nagoya, Japan, was indeed a great event. The Conference, as many of you witnessed, was epoch-making and the best one in the history of IAPH not only because of its scale as seen from the largest number of participants from 62 countries representing the world's ports, but also in its achievements as seen from the fact that our port community has now further strengthened our ties and cooperative relations and thus have laid a secure basis for our future activities.

To name a few of these achievements, I firstly mention the total restructuring of the technical committees and the review of the scope of their activities in order to make these committees function more efficiently. I am very grateful for the respective committees' increased activities under the new set-up, and wish to express my highest appreciation to the efforts exerted by chairmen, liaison officers and all members of the Association.

Secondly, I would like to mention the agreement with the British Ports Association with regard to representation of IAPH. IAPH, as the only international body which represents the interests of the port authorities of the world, has thus been able to strengthen its relations and communications with IMCO, UNCTAD and other international maritime organizations which are located in Europe. For this, I would like to express my sincerest thanks and

(Continued on next page bottom)

President Mayne stops off in Tokyo

Mr. A.S. Mayne, President of IAPH and Chairman of the Port of Melbourne Authority, visited the Head Office on November 27, 1981 for a liaison conference on broad matters pertaining to Association affairs. Secretary General Sato and other staff briefed him on the activities since the Nagoya Conference, May, 1981 dealing with items including the membership campaign, committee and financial matters, IAPH/BPA Agreement on representation and publications.

President Mayne was satisfied with the results of the membership campaign so far achieved, namely, the increase of 7 Regular Members (17 units) and 3 Associate Members and 17 Temporary Members although 3 Regular Members and 6 Associate Members have withdrawn.

Mr. Mayne made his trip to Tokyo in between the ICC meeting in Manila and ESCAP meeting in Bangkok for both of which he represented the Association.

(Continued from page 7)

appreciation to the BPA and our liaison officers for their outstanding efforts.

The third achievement is that IAPH will attain financial independence from January 1st, 1982. This goal has been accomplished with the great understanding of all members who, step by step, have endeavored to resume financial responsibility for many years, and the most generous assistance given by the Japanese Foundation. Once again I would like to express our sincerest thanks for those who successfully helped us towards this end and at the same time we renew our resolve to keep the Association's financial status as healthy and as strong as possible.

I am grateful, too, to report to you that since the Nagoya conference, our membership campaign has been progressing very well by taking every possible opportunity, under the leadership of the chairman and members of the Membership Committee and of course duly supported by Officers and members in general, to increase members. The results so far observed are quite satisfactory as was reported in the Head Office Announcements column of this edition (in the news of Mr. Mayne's visit). May I remind all of you of the importance of this campaign for the future of our Association and appeal for your help in promoting it further so that IAPH will be able to develop further as a truly international body uniting ports in all parts of the world. Without your kind support and guidance, our goals will be difficult to achieve.

I am convinced that the Executive Committee meetings due to be held in May, this year, in Aruba, the Netherlands Antilles will produce for the Association good results with regards to the progress and increased development of Association activities and they will draw up meaningful guidelines for the 1983 Vancouver Conference of our Association.

My staff and I in the Tokyo Head Office, with the continued guidance and cooperation of Officers, Directors, Chairmen, Legal Counselors, Liaison Officers and all members, will continue to exert ourselves to the utmost to provide you all with best possible service and association.

I look forward to meeting you in good heart at the next conference of our Association.

An interim report on IAPH/BPA representation works

In accordance with the provisions of the IAPH/BPA Agreement on Representation which was entered formally between the two organizations at Nagoya Conference May, 1981, Mr. A.J. Smith, presented an interim report. During the five months since last May, the report describes that, the Association was represented at some 25 meetings of IMCO, UNCTAD/ECE and other international and national organizations of importance to the maritime and port industries.

The report, as President Mayne expressed while he was in Tokyo, vividly presents the versatility and magnitude of liaison works being carried under the Agreement, as well as the focal points of issues now at stake internationally.

It is reproduced on page 10.

IAPH journal has now been given an ISSN number

Members and readers of this journal will notice that, beginning with the January-February 1982 issue, it carries at the top right hand side of the front cover page the designation of ISSN 0554-7555.

This number was attached to "Ports and Harbors" as an internationally recognized code by ISDS (International Serial Data Systems), Japan Center, National Diet Library, which is responsible for the administration of periodicals and journals which have ISSN (International Standard Serial Number) codes, in Japan.

ISDS, according to the information from the National Diet Library of Japan, was established by resolution of the 1967 general meeting of UNESCO within the framework of UNESCO's UNISIST (Division of Scientific and Technological Documentation Information) program for a world science information system. This system is for the development and maintenance of an international register of serial publications and further for defining and promoting the use of a standard code (ISSN) for the unique identification of such publications internationally.

As of 1979, about 95,000 periodicals and journals have classified under the ISSN system and are thus included in the "ISDS Register" (in microfiche form) issued by the Paris International Center.

European Port Information System launched in Antwerp, Mr. Vleugels reports

(Hereunder is the report contributed by Mr. Vleugels, Director-General of Port of Antwerp and Chairman of IAPH Committee on Trade Facilitation. In addition to his report on the Antwerp scene, the secretariat most gladly presents Mr. Eigil Andersen's paper on the issue which is carried on page 16.)

In the presence of numerous personalities, among them EC Director-General F. Braun, the Alderman of the Port of Antwerp J. Huyghebaert, EVHA Chairman R. Vleugels and of representatives of the various ports concerned the data communication and information pilot system between a number of European ports was officially launched during a ceremony in the Antwerp City Hall, November 26th 1981.

This occurs two years after the foundation of the European Port Data Processing Association (EVHA), a

non-profit making association with seat in Antwerp, comprising the following ports:—

Antwerp, Barcelona, Bremen-Bremerhaven, the British Ports through the British Ports Association, Cork, Copenhagen, Hamburg, Genoa, Le Havre, Naples, Piraeus and Rotterdam.

The major objective of the computerized pilot system is the linking of these ports for exchanging information on ships departures and arrivals, dangerous substances and other data of interest.

The basic idea of this system is to send all data to the central data bank in Copenhagen, the port authorities being responsible for providing the data with regard to the movements which take place in their ports. The data about the ships' characteristics are checked by comparing them with an extract from Lloyd's data file.

The message about the movements includes the complete data concerning departure and the estimated time of arrival in the port of destination (ETA). The ports of destination can choose to receive the data intended for them once or several times a day.

Since it concerns a pilot system attempts are made to achieve the link-ups in various ways, from computer to computer, via various sorts of terminals and via telex in order to be able to include users with only a small number of movements.

The pilot experiment, part of a first phase of development and partly financed by the European Communities is to run in parallel with a study to define the design of the final network to be implemented to serve all ports of Europe and to link them with similar developments outside.

On the occasion of the official launching of the pilot network, the contract to carry out said study was signed between the European Communities and EVHA.

Visitor

Mr. Arno Oscar Markus, President of PORTOBRAS (Empresa de Portos do Brasil), visited the Head Office on December 10, 1981 and met Dr. Hajime Sato, Secretary-General, and his staff. Dr. Sato, explaining recent situation of the Association, asked for his continued support to and participation in the IAPH activity.

Mr. Markus, in Tokyo on December 7 and 8, concluded a bilateral governmental arrangement for the development of Praia Mole port with the Japanese government.

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Cable: MARLHARB

(Mr. M.J. Goulden, General Manager)

Address Change

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Telex: 295741

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(elected in November, 1981 for the term 1981-1983)

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Alternate Director:

Mr. Samuel Elegbe Es.

Directeur General Adj.

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Port of Reykjavik

P.O. Box 382, 121 Reykjavik

Alternate Director:

Mr. Hannes Valdimarsson

Chief Engineer

Port of Reykjavik

P.O. Box 382, 121 Reykjavik

An Interim Report on the IAPH/BPA Agreement on Representation for the period June to 15th October 1981

Relationship with UN Agencies

The principal European-based UN Agencies, with which IAPH has had a continuing relationship, are IMCO and UNCTAD. During the period under reference it has been possible to consolidate an IAPH presence at meetings of these bodies, and with their respective officials, where discussion has covered a variety of topics and interests. Matters of particular interest to ports arising from these discussions are set out below in digest form and in chronological order.

IMCO

In a paper submitted to the **Sub-Committees on Fire Protection (22–26 June)** and **Bulk Chemicals (14–18 September)**, IAPH, jointly with the International Chamber of Shipping (ICS), the Oil Companies International Marine Forum (OCIMF) and the European Council of Chemical Manufacturers Federations (CEFIC), set out a 2 year interindustry work programme to deal, in detail, with the problems of inert gas requirements for chemical tankers. A copy of the paper is attached for ease of reference.

The Sub-Committees were particularly anxious to have substantive information on some aspects of the work programme at an early date. It was noted, in that regard, that the joint IAPH/CEFIC evaluation referred to at 2.1.2.3 below could probably be made available by mid-1982.

The Bulk Chemicals Sub-Committee continued to evaluate the hazards of new chemical products for inclusion in the Bulk Chemical Code and to consider the Code's extension to cover aspects of pollution. It should be noted, for ship classification purposes, incidentally, that harmonisation of the Bulk Chemical Code with the Gas Carrier Code has produced "The International Code for the Construction and Design for Ships carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code)"

IAPH members will have an interest in the progress made towards the development of procedures and arrangements for the discharge of noxious liquid substances, and the provision of reception facilities for these. Draft Standards are being revised; it is therefore important that IAPH should have an active involvement in the work of an inter-sessional drafting group of the Sub-Committee. With regard to reception facilities at ports, IAPH members, after full consultation with port users, should establish where inadequacies exist, and, in the event, take appropriate steps to meet their obligations under MARPOL. A recent survey conducted in the United States, for example, indicated a relatively low need for reception facilities under the MARPOL Convention 1973.

The Terminal Safety Sub-Committee of IAPH's COPSEC in particular, and IAPH members generally, will wish to note that the 7th International Symposium on the Transportation of Dangerous Goods by Sea will be held in Vancouver, British Columbia, Canada, from 26th September to 1st October 1982. Details of the Symposium arrangements are available on request from Captain B.F. McKay, Co-Chairman Conference Steering Committee, 11th Floor,

Tower "A" Transport Canada, Ottawa, Ontario K1A 0N7, Canada.

At the meeting of the **Legal Committee (21–25 September)**, there were only two substantive items of business, each having a particular importance for ports.

The Committee continued to consider Draft Articles for a Convention on Liability and Compensation in connection with the Carriage of Noxious Substances by Sea (HNS Convention) which, IMCO's Council has decided, will be placed before a Diplomatic Conference in 1983 or 1984, not in 1982 as had previously been arranged.

It is evident even now that the Convention will be limited, in the first instance, to bulk carriage of hazardous and noxious substances and that packaged substances will be excluded. There is a deal of sympathy, both within the IMCO Secretariat and the national delegations, with the generality of views expressed by IAPH in Nagoya Resolution No. 4 dealing with the definition of transport, damages limitation and persons responsible, and it will be necessary to take up these matters from time to time both within and outside IMCO. What is less certain, however, is a favourable outcome to the IAPH view on the inclusion within the Convention of compensation in respect of damage caused by fire and explosion on board oil tankers.

My contention at the Legal Committee meeting was that ports necessarily had to provide against the potential for catastrophic damage inherent in oil traffic, as it is carried out at the present time. The sheer volume of the world-wide traffic in oil; its high commercial value; the kind of ships in which the traffic is conveyed—in many instances they are sub-standard ships; the nature and capability of the organisation at the ports of discharge; the unpredictable human factors of carelessness and errors; other mysterious causes of accident, all combine to suggest to us that oil should certainly not be excluded from the final list of substances to be included in the proposed Convention. It will be necessary for IAPH to put flesh on the bones of that rationale if the contention is to be made incontrovertible.

The second substantive item dealt with by the Legal Committee related to the revision of the international maritime oil pollution liability and compensation arrangements. The possible revision of the liability and compensation regimes in the 1969 Civil Liability and 1971 Fund Conventions has been given a high priority in the work programme of IMCO's Legal Committee. IAPH will necessarily want to be clear on the position which representatives should take when issues are under discussion. Particular attention will have to be given to questions regarding financial limits; indemnification of a shipowner by the IOPC Fund; procedures for up-dating limits; problems relating to small ships; shipowner liability; demise charterers and salvors; scope in geographical terms and of damage covered; oil types; unidentified spillages and various aspects of treaty law.

The Sixth Consultative Meeting of the London Dumping Convention was held during the period 5–8 October. IAPH

has a continuing interest in the Meeting's deliberations particularly as they affect the use of "special care" techniques of ocean disposal. These techniques relate directly to the considerable and authoritative IAPH presentation to discussions by the IAPH delegation leader Herbert R. Haar Jr., Chairman of the IAPH Ad Hoc Dredging Task Force. In the event, the IAPH proposals for special care measures were accepted by the Meeting to a limited extent; the proposed use of emergency provisions under Article V(2) of the London Dumping Convention was not accepted.

The Meeting's awareness of the increasing concern on the part of non-governmental international organisation with the subject matter of the London Dumping Convention, was reflected in a discussion on procedures to be followed in extending invitations to such bodies to be present at future Consultative Meetings. The IAPH interest is, of course, well-established and an invitation will be forthcoming in respect of the next meeting. Rules have been drawn up, nevertheless, and their observance will be mandatory. They are as follows:—

1. Non-governmental organisations wishing to participate in any meeting of the Consultative Meeting and the Ad Hoc Scientific Group shall submit to the Secretariat in writing a request for participation at least three months in advance of the meeting;
2. the acceptance or rejection of any such request made by organisations shall be decided by the Bureau, consisting of the Chairman, Vice-Chairman and the Secretary;
3. the Bureau shall decide whether written material submitted by the organisations accepted under 2. above may be circulated to the meeting;
4. oral statements by observers from these organisations shall be permitted only after prior approval by the Chairman.

The expressed interest of IAPH's Committee on Port Safety, Environment and Construction (COPSEC) in the work of the **Sub-Committee on Ship Design and Equipment** was reflected by attendance at the meeting held during the period 12–16 October. In most respects, however, the detail of discussion passed over the concerns of ports and harbours, and concentrated on "on board" situations. They took account, for example, of developments as regards a code of safety for special purpose ships which, in the event, is to be completed before the 13th IMCO Assembly in 1983. Questions relating to ship manoeuvrability and equipment reliability were discussed, and members were encouraged to provide information and statistics on failures of steering gear, propulsion plant and electrical system so that authoritative comment could be made on the need for duplication of ship components.

Insofar as meetings of this Sub-Committee are infrequent—one each year—much will depend on IAPH taking an active part in extramural discussions with other non-governmental international maritime organisations such as ICS and OCIMF if port requirements as to ship design and equipment standards are to be developed and established. Such a development is strongly recommended.

UNCTAD

IAPH liaison with UNCTAD is maintained by Mr. J.K. Stuart, Chief Executive of a prominent member Authority of the BPA. It has been easily possible, therefore, to correlate respective work programmes to secure the absence of

overlap. BPA's attention, in effect, has concentrated on those aspects of UNCTAD activity which have more than a passing interest in an IMCO context; specifically trade facilitation.

Some ports, even now, have a direct and positive interest in the processing and transmission of maritime trade data. It is strongly believed that port involvement in this activity area will become an accepted norm in the not too distant future, having regard, in particular, to the ready accessibility and growing usage of relatively low-cost automatic data processing equipment.

It is a pre-requisite to the effective use of this communication medium that there should be developed agreed standards and procedures. International coordination of these developments, so far as the needs of various types of communication networks are concerned, is normally ensured through the agencies of various specialised international bodies such as, for example, the International Telecommunication Union (I.T.C.). So far as the needs of ports and harbours are concerned, however, it is felt to be sufficient at this time, to accept without question those standards, relevant to maritime trade, which have already been agreed and put into operational use internationally.

A fact-finding visit on 30–31 July, to the offices of UNCTAD and the UN's Economic Commission for Europe dealing with Facilitation Procedures, has provided some of the details of current and projected activity from which a judgement can be made as to which standards of data interchange can be adopted advantageously by ports wishing to further their involvement in data processing and communication activity. Other information areas are being explored and will be reported on at a later date.

Whilst dealing with port data processing and communication activity it is pertinent to note the writer's close identification with and commitment to Europese Vereniging Voor Haveninformatica, an Antwerp-based port research project designed specifically to meet and provide for port operational requirements. Meetings to progress the project are regular and frequent, and all participants are devoted to the ideal of its international extension beyond the confines of Europe under the aegis of IAPH. Reports on EVHA developments will therefore be submitted from time to time.

Liaison with UN Agencies to 31 December 1981

Arrangements have been made to attend at the following meetings:—

IMCO—Council (6.11.81 and 20.11.81)

IMCO—Assembly (9–20.11.81)

IMCO—Marine Environmental Protection Committee (30.11.—4.12.81)

IMCO—Sub-Committee on the Carriage of Dangerous Goods (7–11.12.81)

IMCO—Legal Committee—Intersessional Meeting (7–11.12.81)

Tentative arrangements are in hand to continue discussions with UNCTAD and UN (E.C.E.)

Relationship with European-based International Maritime Transport Organisations

This report on the continuing development of relationship with maritime-related European-based international

organisations should be regarded as an extension of that which was presented to the Board of Directors and Executive Committee in April 1981.

Ship/Shore Safety Check List—Guidelines

Several meetings have been held between IAPH representatives and representatives of the International Chamber of Shipping (ICS), the Oil Companies International Marine Forum (OCIMF), Conseil European des Federations de l'Industrie Chimique (CEFIC), International Association of Independent Tanker Owners (INTERTANKO) and the Society of International Gas Tanker and Terminal Operators (SIGTO), culminating, on 17 September, 1981, in the successful completion of the ship/shore safety check list guidelines. Agreement was reached that the Guidelines and check list should be printed and circulated by the sponsoring organisations with the commendation that they should be brought into early use by their respective members. Arrangements are in hand for printing the check list and guide lines and their circulation to IAPH members directly by the BPA will be at the discretion of the IAPH Secretariat.

Inert Gas Systems on Chemical Tankers

Work has continued on the joint investigation by port, shipping and chemical industry representatives of the use of inert gas on chemical tankers carrying flammables with a view to developing, if necessary, standards for controlling the flammability hazards equivalent to those pertaining to oil tankers.

It will be recalled that IAPH members were circulated to determine the number and location of harbours and jetties which were directly involved in the acceptance of chemicals and, in the event, whether liquid nitrogen was close at hand. It is immensely pleasurable to be able to report a massive response by members to the questionnaire. Information has been received, to date, from 91 member ports in Canada, USA, Caribbean and West Indies, Europe, Middle East, South Africa, East Africa, India, Pakistan, Sri Lanka, Burma, Thailand, Malaysia, Indonesia, Pacific Islands, Australia, New Zealand, Tasmania and the Far East.

Information provided by ports, together with costing and technical details supplied by CEFIC members, is currently being evaluated and edited for submission to IMCO hopefully by mid-1982.

Revision of the International Safety Guide for Oil Tankers and Terminals (ISGOTT)

OCIMF has decided that it is both appropriate and urgent to undertake a revision of ISGOTT which has long been regarded as the definitive document on terminal safety by IMCO and the non-Governmental International Maritime Organisations. The deep interest of IAPH in matters affecting terminal safety, spearheaded by the work programme of the Terminal Safety Sub-Committee of COPSEC, has suggested that IAPH should have a direct involvement in that revisionary process. The Chairman and Deputy Chairman of the Terminal Safety Sub-Committee have been informed of these developments and of their urgency, and have authorised me to coordinate the IAPH "presence" at joint discussions, the first of a series of which was held in Rotterdam on 4th August. Further meetings in both Rotterdam and London are scheduled before the end of the year.

ChemSea '83

The European interests of both ICS and CEFIC have asked me to consider the possible inclusion of an IAPH speaker from the European area at a ChemSea '83 Conference to be held in London during the period 13–15 April 1983. The Conference, which is to be sponsored in the main by ICS and CEFIC, has had an input from the British Ports Association on previous occasions; it is fitting, however, in view of the identification of IAPH with joint action programmes that the ports speaker on Safe Terminal Operations should be representative of IAPH. I have therefore taken up the matter within the framework and work programme of COPSEC's Terminal Safety Sub-Committee. It will be of general interest, however, to have sight of the preliminary programme for the Conference, a copy of which is attached.

IALA—Port Signals

Arrangements were made for IAPH representation at the Sixth Meeting of the Joint IAPH/IALA/PIANC Committee on Port Signals held in Brussels, Belgium, on 30 September and 1 October 1981.

The meeting's recommendation on basic messages and signals, for general acceptance by the IAPH membership, has taken account of the following principles:—

- All vessels must be given a clear instruction;
- All signals must be considered as directional;
- Red lights mean "do not proceed";
- Green lights mean "proceed", subject to the condition stipulated;
- Red lights and green lights should never be displayed together, as this may cause confusion;
- Main messages given by port signals **always** comprise three lights vertically disposed, to enable them to be distinguished from other signals.

It is understood that no further work on this subject is projected in the near future; arrangements have therefore been made to provide COPSEC's Marine Safety Sub-Committee with the substance of the joint meeting's conclusions for examination, in the first instance and then, hopefully commendation for general acceptance in due course by the IAPH membership.

PIANC

Preliminary discussions have been held during the period with UK-based PIANC officials and "office-bearers" to reach a better understanding of their respective work programmes with a view to achieving a more effective correlation of work effort in areas of mutual interest to both IAPH and PIANC.

ICHCA

Following a request made in Nagoya, in May, by the then President of ICHCA, Mr. Couvert, I arranged a meeting on 28 July with the Secretary-General ICHCA and the Honorary International Treasurer of ICHCA's Council and Executive Board, to assess areas of mutual interest to both IAPH and ICHCA in which joint effort could be expected to benefit both organisations. It is disappointing to have to report, however, that the wide-ranging discussions did not, at this time, permit us to define areas of joint activity. It is possible that, after further examination within the structures and procedures of the respective organisations, we may be able to assess more clearly objectives and priorities in respect of projects capable of being tackled jointly by

the two organisations.

Nonetheless, it was agreed that it would be helpful to "compare notes" from time to time and that will be done.

Advisory Committee on Pollution of the Sea (ACOPS)

As requested by the Secretary-General, IAPH, I have arranged to represent IAPH at a meeting on 22 October to discuss problems of sea pollution as experienced by members of a number of international organisations. The detail of discussion will be reported on at a later date; in preparing material for the meeting, however, it has been necessary for me to rely on background data relevant only to the current UK situation. It would not be inappropriate, therefore, for data to be assembled and regularly updated by IAPH relating to:

- responsibility for anti-pollution measures;
- responsibility for pollution clearance in areas of port jurisdiction;
- pollution clearance equipment;
- pollution disposal techniques;
- pollution damage.

North European Harbour Masters Congress

In various meetings during the period with members of the North European Harbour Masters Congress, I have sought to clarify their role in the reorganisation of IAPH Committee structure. Their expressed willingness to contribute their considerable expertise in marine operational matters has been noted and will be utilised within the Committee and Sub-Committee work programmes.

Ad-hoc Activities on behalf of IAPH Committees

It has been necessary, during the period under review, to coordinate and take part in a number of meetings to further the specific objectives of certain IAPH Technical Committees.

On 22 July and 22 September meetings took place in Paris and London respectively between representatives of COPSEC and CLPPI to define more precisely the tasks to be undertaken by the Committees in relation to the evolution of vessel traffic system policies.

On 4 September, in London, representatives of COPSEC's Marine Safety and Ship Design and Equipment Sub-Committees and the International Chamber of Shipping expressed a willingness to cooperate with each other in the furtherance of mutually agreed objectives which will be reflected in the work programmes of the Sub-Committees.

On 24 September, in London, the Chairman of the Public Affairs Committee, Mr. F.M. Wilson, met European/African regional members to discuss possible strategies for the Committee and to consider a proposal for a world-wide study on the attitude of communities to ports. The detail of comments made will be assessed with those of other regional meetings and no doubt incorporated in a report of the Committee in due course.

Recommended Action

The matters under reference in this report are, it is thought, of interest to IAPH members generally; more specifically, however, it might be appropriate to bring them to the attention of certain of the IAPH Technical Committees in the event that they might wish to consider whether action needs to be taken to further the interests of IAPH members. For ease of reference, the matters in question, together with the action recommended, are set

out hereunder, in summary form, and linked directly with the Technical Committees and Sub-Committees which, in my view, should deal with them in the first instance.

Committee on Port Safety, Environment and Construction (COPSEC)

Terminal Safety Sub-Committee

It is recommended:

that full and continuing support should be provided to the inter-industry work programme, and, in particular, to the evaluations listed as Nos. 7, 8 and 9 on the programme; that the Sub-Committee should be associated with the work of the intersessional drafting group of IMCO's Sub-Committee on Bulk Chemicals;

that an enquiry be made of IAPH members to determine whether and to what extent inadequacies exist at the present time in the member's reception facilities;

that full support should be given to the proposed circulation to, and use by, IAPH members of the Ship/Shore Safety Check List and Guidelines;

that the Sub-Committee should be directly associated with the revision of ISGOTT.

Marine Safety Sub-Committee

The Sub-Committee should be asked to consider the joint recommendations on port traffic signals with a view to commending their adoption by IAPH members.

The Sub-Committee should also consider the collection and upkeep of data as described at (ACOPS).

Ship Design and Equipment Sub-Committee

It is recommended that:

data should be produced;

joint work programmes should be developed with other international maritime organisations.

Ad-Hoc Committee on Dredging

The requirements of the rules listed should be noted and met.

Committee on Legal Protection of Port Interests

Consideration should be given by the Committee to matters as described at the meeting of the IMCO Legal Committee.

Trade Facilitation Committee

The attention of the Committee is drawn to 1.3.3. My view is that it would be timely to consider port requirements and operational practices for inclusion in the discussion process leading to the development of trade data interchange standards.

LIST OF MEETINGS

1981 June	10-11	Inter-Industry Group on Inert Gas Systems	(London)
	22-26	IMCO Sub-Committee on Fire Protection	(London)
July	21-22	Joint Meeting of COPSEC/CLPPI representatives	(Paris)
	27	Preparatory Meeting on Trade Facilitation	(London)
	28	Liaison ICHCA	(London)
	29-31	UNCTAD/ECE on Trade Facilitation	(Geneva)
August	4	Liaison with SITPRO UK - Trade Facilitation	(London)
	18	Procedural Consultations with UK Director	(Glasgow)

(Continued on next page bottom)

Report on Port Training by Recipient of IAPH Bursary Scheme

Training Course on Port Management and Operations in the Port of London Authority, June 15-26, 1981

by Mr. Hamidur Rhaman, Deputy Secretary, Chittagong Port Authority

Course Objective: The Course provided an overall appreciation of the structure and operation of the Port of London Authority and provided first hand observation and departmental procedures. Aspects covered including conventional operations, container operations, bulk wine handling, documentation computer operation, marine services, security, personnel, engineering, finance, marketing management services. A number of conducted visits to operational areas including Tilbury Docks were incorporated in the course.

Level: Junior and Middle Management.

The Training Course was conducted by PLACON LTD., the consultancy and training subsidiary of the Port of London Authority. The Committee of International Port Development of IAPH awarded a bursary to me for attending the course. The contents of the course were:—

1. Introduction to PLA.
2. Cargo handling.
3. Import and export documentation.
4. National Dock Labour Board Training Centre.
5. Purchase and supply.
6. Port finance.
7. Role of manpower.
8. Accident prevention and safety measures.
9. Manpower administration.
10. Industrial relation.
11. Container operation.
12. Computer working.
13. Marine service of PLA.

14. Planning and management service.
15. Port police and security.
16. Marketing.

The course was designed to provide an overall appreciation of the structure, organisation, operation as well as working procedures of PLA. There were 17 participants from 11 countries, such as, Bangladesh, Tanzania, K.S. Arabia, Sudan, West Africa, Iraq, Venezuela, Kenya, Nigeria, Brunei, Ivory Coast, i.e. directly working in the ports or in the ministry or with the shipping companies of the respective countries. Almost all of them were the students of the University of Wales Institute of Science & Technology, who had just completed a nine-month diploma course on port management and operation.

A number of visits to the areas of special interest were included in the course syllabus, such as, multi-user container terminal, West African Terminal, Barrier, National Dock Labour Board's Training Centre etc. It was almost a practical course. The subjects mentioned above were discussed by the senior officials of the respective fields of the P.L.A. In course of discussion various problems of the London Port and their possible solutions were high-lighted. The course was mainly designed with a view to provide first hand information of the P.L.A., its management and operation and the theoretical portion of the port management was avoided.

The discussion on all the subjects were of general nature but interesting and would be helpful for the participants in their own fields. The P.L.A. is the owner as well as operator of the enclosed docks in the Port of London. Maintenance of the docks, sheds, cargo handling equipments even the dock labour forces in the enclosed docks are the responsibility of the P.L.A. Normally stevedoring is done by the outside parties in other ports but this is done by the PLA in the enclosed docks with its own regular dock labourers. Advantages and disadvantages of this system was also discussed. With the introduction of developed computer system and because of container traffic and other new technologies the necessity of manpower is decreasing and as a result the P.L.A. has had to reduce the number of their employees. The reduction has been achieved by natural wastage and the operation of Voluntary Severance Schemes.

The visits to the operational areas were interesting. The procedure followed in various docks, sheds and container yards may be adopted in the ports of the developing countries.

The operational arrangement of the Tilbury Dock and West Africa Terminal could be considered as ideal for the ports of developing countries. It was observed that the West Africa Terminal had two sections—one for the export cargo and other for the imported cargo specially wood and wood products. In the export side sheds are situated near to the jetty head to facilitate easy loading of the ships where as a wide open space is kept in front of sheds in the jetty for imported cargo. This situation facilitates expeditious loading and unloading of ships with a view to minimise the ship's waiting time in the port.

For quick clearance of cargo advanced planning is made

(Continued from page 13)

	24	Liaison—Captain Yoshinaga	(London)
	27	IMCO Liaison	(London)
	28	Inter-Industry Group on Inert Gas Systems	(London)
September	4	Liaison with ICS	(London)
	7	Liaison—Port Signals	(London)
	14–18	IMCO Sub-Committee on Bulk Chemicals	(London)
	15 & 17	Ship/Shore Safety Check List Guidelines	(London)
	16	Liaison—EVHA (Data Processing)	(London)
	21–25	IMCO Legal Committee	(London)
	22	Joint Meeting of COPSEC/CLPPI representatives	(London)
	24	Liaison Committee on Public Affairs	(London)
	28) IMCO International Oil Pollution Compensation	
October	2) Fund—Assembly	(London)
	5–9	IMCO 6th Consultative Meeting	(London)
	7–8	Liaison N. European Harbour Masters	(Amsterdam)
	12–16	IMCO Sub-Committee Ship Design and Equipment	(London)
	15	Revision of ISGOTT	(London)

in co-ordination with the allied parties and as a result there is no congestion. Direct delivery is in practice.

The documentation system and custom formalities are also very simple and the clearing agencies are allowed to clear their cargo on credit. These also facilitate quick clearance.

The various departments of the P.L.A. work in a very co-ordinated system although responsibilities of the Departmental Heads/Managers/Controllers of various Sections/Divisions are specified clearly. The P.L.A. accounts is maintained with the computer. For the personnel department the P.L.A. is also introducing computer systems.

The Engineering Department looking after all the engineering aspects of the P.L.A. which includes Civil, Mechanical and Electrical divisions. The maintenance of docks, jetties, basins, all civil structures and constructions, electrical installations, maintenance and operation of mechanical equipments, crafts, workshop etc. are the responsibilities of the Engineering Department.

Manpower Department is looking after the manpower maintenance, requirement training, welfare etc. Special emphasis is given on the welfare activities for the workers.

The Marine Services Department is responsible for the ship movements, hydrography, dredging, locks, navigation etc.

The Planning Department prepare development plans and programmes on the basis of requirement received from the various departments within the Authority. If the Government is to provide necessary funds under the relevant acts of parliament then the development plan must be approved by the Government.

The working of the safety and security divisions are also simple and very effective. The Management Service Division is responsible to study the given problems and to suggest solutions. For a port such division is very important.

The participants were also taken to the National Dock Labour Training Center. It was told that for the last 7/8 years no dock labour was recruited so naturally the necessity of such training Institute could be considered less. But to train a dock labour in various trades this Training Centre provides training. The system of training as observed was very effective.

As this was mainly a practical training course the working conditions of the London Port and the management of the P.L.A. were mainly discussed and shown to the participants. The knowledge and experience gained by the participants will be helpful in performing their responsibilities in their respective field.

In the concluding session I have made the following suggestions:

1. This type of course may be very helpful for the participants, those who will complete the Diploma Course on Port Management and Operation in the University of Wales Institute of Science & Technology, but for other general candidates some theories should also be included in the syllabus. On the other hand, the P.L.A. may arrange two separate courses, one for the students of Diploma Course of the University and other for the general candidates working in various ports of allied agencies.
2. Theories may be discussed before lunch (for general candidates) and in the evening visits may be conducted to the working points.
3. The participants may be allowed to discuss their own

ports and the problems, if any. A session may be provided for this purpose. This will help a participant to know the working of some other ports.

4. There may be a session on the international shipping, development of ships, international organization such as I.A.P.H. etc.
5. Arrangement should be made by training authority to send the papers and notes given during the session to the participant's home. Normally the participants could not carry the papers with them because of weight. For this an amount may be included in the course fee.

How the Experience gained in the Training may be utilised in my Port.

1. The Chittagong Port Authority is constructing a multi-purpose jetty for handling containers. The operation system of the container yards of the PLA may be introduced here. A working paper on it will be placed before the Board for consideration.
2. Dock Labour Board is to be established very soon. For the training of the Dock Labour, a Training Institute will be required. The lay-out, practical training workshop, training method of the National Dock Labour Board Training Centre, London, will be helpful. A paper on it may be prepared and submitted to the appropriate authority, if so desired.
3. The overall knowledge I gained in the training is an added experience which will be helpful in discharging my duties and responsibilities.

In the conclusion of this brief report I must express thanks to Mr. J.K. Stuart, Chairman of the Committee of Port Development, I.A.P.H. for his kindness in awarding me the I.A.P.H. Bursary and contacting various Training Organizations for my placement and keeping me informed about the situation time to time. Because of his well-advance-action I did not face any problem abroad in any way for this training.

I must express my gratefulness to the CPA Management and the Ports & Shipping Ministry of the Bangladesh Government to allow me to participate in this training course.

I am grateful to the General Manager of PLACON Ltd. for making a place available on the course for me and also to Mr. P.B. Reeds, of PLACON Ltd. who was assigned with the responsibility of Course coordinator. He was much attentive to and cooperative with the participants and extended all possible help to solve their all sorts of problems.

Thanks to the lecturers and instructors for their utmost efforts to make their respective subjects clear to the participants.

I wish to express my appreciation to all the participants who were very much friendly and cooperative for which it was possible to make the days of the Course enjoyable too.

Lastly with confidence I express further that the experience that I gained in the Training Course will be utilised fully in the appropriate situation.

Open forum: Port releases:

Establishing A Computerised Inter-Ports Communications System

**by Eigil Andersen,
General Manager,
Port of Copenhagen
Authority**



Background

In autumn 1977 a group of people with maritime and data processing interests met in Bremen to discuss the possibilities of establishing a computerised communications system between European ports.

The meeting led to the conclusion that as the explosive development in the industrialised societies in virtually every sector, including the transport sector, had been conditional upon utilisation of modern technology, the ports must analyse their possibilities of keeping abreast of these developments, one approach being to establish a communications system.

The requirement stipulated for such a system was to be that it had to meet the demand, rapidly and efficiently, for information—both for the ports and for various user groups with interests allied to maritime transport and traffic.

At the same time the group acknowledged the fact that the comprehensive compilation of data, and its analysis so as to form the basis for more serious consideration with regard to the subject matter and methods to be applied in such a communications system, could be insuperable in economic terms if the entire costs were to be borne solely by the small group who had taken the initiative.

It was thus decided that steps were to be taken to have detailed investigations devised and implemented as a joint project under the auspices of the EEC, with the possibility of economic support which would derive from this structure.

The application was favourably received, and in January 1978 the EEC Commission encouraged the member states to provide experts for a working group, which was given the following terms of reference:

To conduct a study, the main purpose of which should be to identify the most common needs, which would be jointly examined with a view to defining effective and economic solutions. This should be done by investigating existing and future utilisation of EDP in and between the Community's ports and allied users.

The Working Group

Seven European ports provided an employee to serve as

a member of the working group: Antwerp, Copenhagen, Genoa, Glasgow (Clyde Port), Hamburg, Le Havre and Rotterdam.

The composition of the working group turned out to be ideal, as it represented expertise on maritime transport and traffic, port administration and technology, and computerised data processing. The group held its first meeting in February 1978, and has since then been devoting intensive efforts to the task.

Today the stage has been reached where a pilot project can commence its practical implementation in mid-September 1981—this will be dealt with further on.

Phase 1 of the Work

The working group, which was referred to as the ASIPE GROUP (ASSOCIATION POUR LES SYSTEMES D'INFORMATIQUE PORTUAIRE EUROPEENNE), commenced its work by drawing up some questionnaires which were sent to all EEC ports with an annual cargo turnover in excess of 1 mill tonnes of goods, excluding oil products, shipping lines and brokerage firms and a number of organisations with maritime interests.

During the subsequent 11 months the members of the working group were in touch with over 750 ports, port users, and private and public organisations, while conducting 40 interviews and meetings with selected ports.

Analysis of the information compiled during this preliminary phase revealed the following primary facts:

1. A growing social and environmental pressure to improve control of shipping was observed.
2. The ports with allied interest groups in the Communities acknowledged the necessity of endeavouring and actively participating in efficient development in accordance with contemporary needs.
3. The decreasing prices of computer hardware and the increase in EDP expertise in the ports revealed a willingness to accept the ideas outlined for setting up and running in a communications system.

Of the ports contacted—a total of 236—no fewer than 184 replied favourably to the approach made by the working group.

A detailed analysis of the replies given in the returned questionnaires from these ports revealed 6 elements clearly distinct from a number of special and locally influenced areas as being desirable for inclusion in any communications system.

These elements were:

Dangerous cargo—Vessel identification—Vessel Position Recording—Cargo data—Container systems—Traffic control.

Phase 2 of the Work

The working group was then delegated the task of drawing up a proposal for a pilot project, the main purpose of which was to be to document that an exchange of relevant information between ports can be effected by application of various types of hardware with the speed made possible by modern technology, at the same time providing a guarantee of the accuracy of the data.

Of the 6 elements accorded the highest priority—as listed above—the physical vessel was chosen as the basic object for a pilot project, devised so that communication during the implementation of the pilot project could be augmented with other elements of information.

Several factors indicated a preference for this choice. Only a few will be outlined here, as they are an obvious choice in meeting the stipulated requirements and the desired method of procedure.

1. A wide range of data on the physical vessel was already available in machine-readable form, as Lloyds Register of Shipping has inserted and processed its registration of vessels with the aid of computers for some years.
2. This factor would make it possible, in a simplified manner, to organise, test and utilise the immediate advantages of the data base in connection with distributed data processing.
3. Finally, for the practical port employees who are to operate and utilise the system—feed in and receive data to/from the communications system—the physical vessel is wellknown and familiar, so that understanding of the importance of the data and its application would not cause misunderstandings and/or mistaken evaluations.

The Draft System

The working group drew up and submitted a draft system, the idea and main contents of which will be described briefly.

The communications system in draft is to be established as an advanced notification system in which hardware, whether it be Telex, TTY or Computer, can be applied as chosen. One of the reasons for this is the desire for a link to a "Final Network" which does not depend on the acquisition of a computer, if the relevant port has not already a computer.

The basic idea of the draft system was that the communications network was to be established around a central computer with adequate power and size to be capable of communicating both ways with the types of hardware referred to.

The principles of the communications technology were the following:

The port of departure draws up and sends a notification per departing vessel to the central computer, which sorts, completes and enters the notification at the right address. (The system is also designed so that several items can be sent under the same calling up—in a package.)

The outgoing notification is written as concisely and in as concentrated form as possible, while incoming notification to the receiving port has additional relevant contents and form, which can be read straight away and used by employees at the port of destination.

The technology behind this can also be simply described:

Selected items of information from Lloyds Register of Shipping are read into a data base in the central computer.

3 defined keys provide access to the specific contents of the data base: Lloyds registration number—the vessel's call sign—the vessel's name and flag code.

A couple of examples will illustrate this better than a lengthy description.

Example 1:

Port A sends to the central computer a notification containing information on the port of destination, ETA and possible variable items of information, but regarding the physical vessel only its call sign: 9999.

The port of arrival—port B—will receive a notification where the call sign 9999 has released the following data.

— Lloyds register number—call sign—name of vessel—nationality—type of vessel—length—width—number of main propellers—method of propulsion—max. draught—designations for Bow thruster—Shelter deck—Bulb bow—GRT, NRT and DWT (high and low). All items of information on the physical aspects of the expected vessel which are regarded as being of relevance for a receiving port. It should be mentioned here that the max. draught will often be replaced by actual Fore and After Draft, as the outgoing port can key this in as a variable.

Example 2:

Correspondingly, a compressed outgoing notification on a cargo's content of dangerous goods will be presented in an easily comprehensible manner.

CM2751C11017C57921 will, for example, be presented for the recipient as:

2751 t Chemical Mixtures in Bulk, 1017 t Packed Goods IMCO class 1, 7921 t Packed Goods IMCO class 5.

The above are, of course, a very simplified presentation of the contents and possibilities of the system, but most people will instantly be able to see the obvious advantages which the ports and their users will be able to derive from such an advance notification system, especially on the day when it can be expanded and developed to communicate with all interested ports and corresponding systems in other parts of the world.

Economy

Up to the stage at which the report containing the draft system as described was submitted, the participating ports made their employees available free of charge, while an EEC fund covered the members' expenses on travel and accommodation in connection with the work.

The contents of the report, argumentation, documentation, draft for the system etc. received in the EEC Commission and later from the political side such a favourable reception that proposals for the continued work were submitted and approved—this included implementation of the pilot project—as qualifying for economic support.

The project was taken on as a data processing project and was granted economic support with 49% of the total cost to a maximum limit which at this stage it is thought possible to keep within.

A number of European ports, 9 altogether, in the Communities have promised to place hardware and personnel etc. at disposal for a practical implementation and testing of the pilot project over a period of at least 12 months.

These 9 ports are: Antwerp, Bremen, Bremerhaven,

Clyde Port, Copenhagen, Genoa, Hamburg, Le Havre and Rotterdam.

E.V.H.A.

It should be noted at this point that the ports and others who have actively contributed towards reaching a solution to the problems outlined and the questions raised formed, in autumn 1979, an association, EUROPESE VERENIGING VOOR HAVENINFORMATICA, with headquarters in Antwerp.

The association is usually referred to as E.V.H.A.

It is non-profit organisation, and among its articles of association are:

1. On behalf of the European Communities to implement 3 data processing projects with regard to a European ports information system as approved by the Commission.
 - a) a Pilot Data Communication and Processing System
 - b) a Dangerous Goods Study
 - c) a Final Data Communication and Processing Study
2. To undertake solution of other projects of common interest to the association.

During the period after its formation, E.V.H.A. has concentrated its efforts mainly on acting as a joint organ with respect to the EEC Commission, as close co-operation with this body has been, and will continue to be, a necessity, especially for as long as the pilot project referred to and related studies receive economic support from Community funds.

The ideas, however, leading to the formation of the E.V.H.A. were also based on the desire to be capable of co-operating with authorities, ports and other organisations on matters of common interest within the field of maritime traffic, and with the ports as communication channels.

The belief was expressed that a really developed communications system can contribute towards economically feasible solutions for many, instead of a situation where some few may feel pressurised to develop their own isolated system to be capable of keeping abreast of the developments of the age.

The Pilot Project

On the basis of the ASIPE group's approved draft system, E.V.H.A. invited open tenders in May 1980 for the task of developing a real system design and availability of the requisite computer power etc. for practical implementation of the pilot project.

Over 100 software suppliers and data processing organisations responded and received the drawn up ITT document.

31 European firms and consortia submitted bids.

After a very thorough examination of the bids, the final choice fell, in November 1980, for a consortium led by a Danish firm, I/S Datacentralen af 1959, which could document many years of experience in communications between Telex, TTY and Computer.

The consortium has since produced a system design, which was approved in February/March 1981, whereupon the actual system and application programming was commenced. At the end of June the work on this had advanced to a point where a demonstration could be presented in Copenhagen.

In July the system was opened for testing of the Telex communication for the pilot project ports, and in step with

the establishing of the TTY equipment and the computer link-up, the system is open also for testing of this hardware.

All phases in the preliminary work have, by and large, proceeded as expected, and an active start for the pilot project is planned for mid-September.

As mentioned earlier, the ports participating in the experiment have high expectations of the documentation which will then form the basis of a Final Network.

Dangerous Goods

At an early stage the ASIPE group stated that it did not feel it had at its disposal the expertise required for dealing with the topic of dangerous goods in an adequately detailed manner.

It was accordingly decided to establish a small sub-group of experts on this specific field. Among their tasks is the recommendation of a clear, easily comprehensible classification system etc, on the basis of comprehensive analyses, which via utilisation of the modern data processing techniques can be satisfactorily incorporated in an expanded inter-ports communications system.

As described earlier, already in the pilot project there are measures for exchange of information on cargoes of dangerous goods, in a simplified form, but also in this case the aim is to be capable of establishing and maintaining a data base which contains the relevant information on dangerous goods for any situation. Its handling, rules for precautions in connection with accidents etc.

At this stage it is impossible to state clearly what form such a data base will take. It is, however, expected that the detailed analysis work with regard to the ports' requirements and the form and contents of existing classification systems should be capable of defining all the elements pertaining to this special cargo group, which it would be timely to organise in a manner which provides the ports with an easy, rapid, round the clock access, enabling them to update information constantly.

Final Network

The most important outstanding task is probably the work on the construction of a Final Network, the link-up possibilities and contents of which are so attractive and so cheap to operate that virtually all ports will join it.

Nobody will be in doubt as to the usefulness of such a tool—a fully developed communications system for ports and the accompanying advantages for their users.

One can just consider planning and service, two concepts in a port's daily work which are so closely inter-related that one cannot function 100% without the other.

Every port management knows the advantages to be derived from the maximum notification of a vessel's arrival, and the more detailed the better.

The possibility of early planning at all stages in connection with a docking and handling of the vessels during their stay in the port is probably the best service the ports can give their customers.

A communications system which also contains detailed information on cargoes of dangerous goods and general information on goods can only contribute towards raising the level of these services. All aspects are considered here, for example notification of the necessary contact persons and ensuring the presence of both equipment and manpower to the extent necessary and at the times when the vessel requires such services.

(Continued on next page bottom)



Spanish-speaking port expert sought by UNCTAD secretariat

The Shipping Division of the United Nations Conference on Trade and Development (UNCTAD) is engaged on a programme of work aimed at:

- improving the efficiency of maritime transport;
- helping developing countries establish and strengthen their merchant marines;
- securing a proper balance of interests between shippers and shipowners;
- improving the management and operation of ports.

The successful candidate would:

- carry out studies aimed at increasing port efficiency;
- provide substantive support for technical assistance projects;
- participate in port management training courses and seminars.

The successful candidate should:

- have a degree in economics, engineering or a related subject;
- have at least 5 years' experience in port operations;
- be familiar with the problems of ports in developing countries;
- be fluent in Spanish and have a good working knowledge of English.

Applications should be addressed to: Administrative Service
UNCTAD
Palais des Nations
1211 GENEVA 10
Switzerland.
Ref. No. 81-G-TAD-184-GE

(Continued from page 18)

Conclusion

It is one of E.V.H.A.'s aims that not only the ports and their users (as users in this context are included: Shipping lines, brokers, Stevedoring and warehousing companies, Stores and bunkering firms, Repair yards etc.) will find a rapid and efficient communications system between ports to be of vital importance, but that others also will understand how to use and derive benefit from such a system.

This latter group includes Pilotage services, Customs Directorate, Police, health authorities, those responsible for security and safety, insurance companies etc.

Let this general briefing conclude with a transcript of the overall formulation of the objectives for the forthcoming pilot project as a documentation for the hopes and views expressed hitherto.

The overall objective for the pilot project must be to provide documentation for:

that the EDP and other equipment with the already developed technology is capable of communicating over long distances,
data of a commercial nature can, with regard to security and protection, be maintained in a communications system between various users,
the economic consequences compare favourably with the yield,
the immediate advantages can be transferred to other areas for rational port operation,
the ports' possibilities for better planning and thus service can be increased,
the communication can contribute towards an extended co-operation with port users and other authorities.

A very ambitious formulation of objectives: there are a number of ports and organisations who do not regard it as unrealistic.

start planning now for



For further information contact:

MarIntec S.E.A. (Pte) Ltd.
864, World Trade Centre
Telok Blangah Road
Singapore 0409
Telephone: 2781000/1/2
Telex: 26418 MARTEC

International maritime information:

World port news:

Report of the Sixth Consultative Meeting of Contracting Parties to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 5-9 October 1981

(Extracts from the IMCO document: LDC VI/12)

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ANNEXES

- Annex 1 — Agenda for the Sixth Consultative Meeting.
- Annex 2 — Procedure for the notification of permits issued for the dumping of wastes and other matter at sea.
- Annex 3 — Guidelines for the study of the long-term strategies and objectives of the London Dumping Convention to the year 2000.
- Annex 4 — Substantive items to be included in the agenda(s) for the Seventh Consultative Meeting and for the intersessional meeting of the Ad Hoc Scientific Group on Dumping.

1. INTRODUCTION

Opening of the Meeting

1.1 The Sixth Consultative Meeting of Contracting Parties to the Convention on the Prevention of Marine Pollution by

Dumping of Wastes and Other Matter, 1972, convened in accordance with Article XIV(3)(a) of the Convention, was held at IMCO Headquarters, London, from 5 to 9 October 1981.

1.2 The Meeting was attended by delegations from the following Contracting Parties to the Convention:

ARGENTINA	PANAMA
CANADA	PHILIPPINES
CHILE	POLAND
DENMARK	PORTUGAL
FINLAND	SOUTH AFRICA
FRANCE	SPAIN
GERMANY, FEDERAL	SWEDEN
REPUBLIC OF	SWITZERLAND
GREECE	TUNISIA
JAPAN	USSR
MEXICO	UNITED KINGDOM
NETHERLANDS	UNITED STATES
NORWAY	

by observers from the following States, not being Contracting Parties to the Convention:

AUSTRALIA	ITALY
BRAZIL	KIRIBATI
IRELAND	

by observers from the following United Nations organizations:

UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP)
INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)

and by observers from the following inter-governmental and non-governmental organizations:

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT/NUCLEAR ENERGY AGENCY (OECD/NEA)
OSLO COMMISSION
PARIS COMMISSION
BALTIC MARINE ENVIRONMENT PROTECTION COMMISSION
INTERNATIONAL ASSOCIATION OF PORTS AND HARBORS (IAPH)
THE EUROPEAN COUNCIL OF CHEMICAL MANUFACTURERS' FEDERATION (CEFIC)
GREENPEACE INTERNATIONAL

(Paragraphs 1.3-1.9 omitted)

Observer status of international organizations

1.10 The Meeting further agreed that invitations to the next Consultative Meeting shall be sent to IAPH, CEFIC and Greenpeace International.

(Paragraphs 2.1-3.11 omitted)

3. REPORT OF THE AD HOC SCIENTIFIC GROUP ON DUMPING

“Special Care” methods for disposal of dredged material

3.12 The Meeting recognized the problems regarding the disposal of dredged materials contaminated with Annex I substances, but for which land disposal methods may also pose problems. The Meeting confirmed the view of the Ad Hoc Scientific Group that, in such cases, the use of “special care” techniques of ocean disposal as proposed by IAPH may present a reasonable means of disposing of such materials, but that these techniques are unproven at present. The Meeting, in this regard, confirmed the view of the Ad Hoc Scientific Group that the use of “special care” techniques for the present should be conducted as field research projects until such time as the accumulated information on any of these techniques demonstrates that they can be applied on a routine basis.

3.13 The IAPH observer confirmed the continuing interest of IAPH in the consideration of special care measures at future Consultative Meetings and meetings of the Ad Hoc Scientific Group. The IAPH observer also expressed the continued willingness and desire of the IAPH to make its technical expertise in matters relating to dredged material available to Contracting Parties and to the Ad Hoc Scientific Group, with particular reference to further reports concerning the development of and experience with “special care” techniques.

3.14 The United States delegation, in expressing support for research studies on “special care” methods for the dumping of dredged material, noted that its present national policy is to consider permits for the ocean dumping of dredged material only when land-based disposal alternatives are not feasible. This policy will be re-examined as a result of extensive research and experience that has been gained in the United States on dredged material dumping during the last five years. In responding to this intervention, the Danish delegation noted the practice in Denmark of considering the feasibility of land-based disposal when the result of tests of the dredged material will indicate that undesirable ecological effects are likely to be created in the marine environment.

3.15 In connexion with the views expressed by the IAPH regarding the emergency provisions of Article V(2) of the Convention (LDC VI/3/1) the Meeting agreed that Article V(2) should not be construed to apply to dredged material which is contaminated with Annex I substances. Some delegations expressed a concern that to construe the emergency provisions in this way might create a loophole in the Convention which could establish a dangerous precedent. Several delegations felt that under such circumstances it would be more logical and appropriate to examine the possibility of using one of the “special care” techniques discussed by the Ad Hoc Scientific Group, rather than consider the matter under the emergency clause.

(Paragraphs 3.16–9.6 omitted)

9. RELATIONS WITH OTHER ORGANIZATIONS

The Role and Long-Term Objectives of the London Dumping Convention

9.7 The Fifth Consultative Meeting had requested the Secretary-General to explore the possibility of convening a meeting between representatives of the Contracting Parties to the London Dumping Convention and representatives of regional organizations concerned with the prevention of

marine pollution. The purpose of the meeting was to discuss the relative roles and future directions of the regional and global conventions. The Secretariat accordingly arranged a meeting on the afternoon of 5 October 1981 at IMCO Headquarters, attended by representatives of the London Dumping Convention, the Oslo Commission and the Paris Commission, the Helsinki Convention and UNEP.

9.8 The meeting between representatives of the London Dumping Convention and regional agreements recognized that the London Dumping Convention had the responsibility for ensuring that the integrity of the global marine environment was not violated through dumping of noxious or potentially noxious substances. This objective can be furthered through the application of regional regulations that take into account specific geographic and biological conditions. It was felt to be particularly important that the London Dumping Convention develops the long-term strategy necessary for the continuing health of the marine environment in the face of increasing problems of waste disposal caused by population and industrial pressures. It was also felt that short-term problems associated with the day-to-day administration of dumping programmes were more appropriately dealt with by regional organizations where these exist.

9.9 The Meeting took note of the discussions which had taken place between representatives of the London Dumping Convention and regional agreements (LDC VI/WP.3) and agreed that the role and long-term objectives of the London Dumping Convention were, inter alia:

1. to create an awareness among all Member States and Bodies of the United Nations of the problems of marine pollution caused by dumping of wastes at sea;
2. to develop the overall legal framework for the taking of all practicable means for the control and prevention of pollution by the dumping of wastes at sea;
3. to establish the overall policy and principles which apply globally and from which regional agreements could draw guidance;
4. to encourage the development of regional agreements in the spirit expressed in Articles VIII and XIV(4)(d) of the London Dumping Convention and to review the progress made under such regional conventions or agreements;
5. to regulate in particular those wastes that contribute to the overloading of the resilience of the oceans to pollution;
6. to provide the necessary linkage with other international organizations (regional or global) concerned with the protection of the marine environment; and
7. to provide a forum for the exchange of information at a scientific and technical level on the global ocean dumping problems, particularly on the long-range impact of dumping at sea and on alternative measures to this method of waste disposal, in particular on long-term solutions.

9.10 The Meeting agreed to establish a small intersessional Task Team to prepare a draft document for the next Consultative Meeting outlining the long-term strategies and objectives of the London Dumping Convention to the year 2000. It was agreed that the Task Team should consist of four members drawn from Contracting Parties representing the following categories:

1. countries that are Contracting Parties to both the

London Dumping Convention and a regional organization (Mr. H.R. Neilson; United Kingdom);

2. countries that are Contracting Parties to the London Dumping Convention but do not belong to any regional organization (Mr. G. Holland; Canada);

3. non-dumping countries that are Contracting Parties to the London Dumping Convention (Prof. A. Engström, Sweden);

4. less-industrialized countries that are Contracting Parties to the London Dumping Convention.

9.11 With reference to 9.10.4 above, the Meeting agreed to invite the Government of the Philippines to nominate a representative to participate in the work of the Task Team. If a representative was not available from the Philippines the Task Team should invite another representative of the same grouping.

9.12 The Meeting also endorsed the principles as to how the Task Team should carry out its work. Some of the aspects which the Task Team will take into account are set out in Annex 3. It was agreed that a final draft of the long-term strategies and objectives of the London Dumping Convention, as prepared by the Task Team, should be circulated by the Secretariat prior to discussion at the Seventh Consultative Meeting.

(Paragraphs 10.1–11.4 omitted)

11. FUTURE WORK PROGRAMME AND DATE OF NEXT SESSION

11.5 Accordingly, the Meeting agreed to hold the Seventh Consultative Meeting from 14 to 18 February 1983. The Meeting also agreed that the Agenda for the Seventh Consultative Meeting should include the items as set out in Annex 4. *(Part of 11.5 omitted)*

11.6 The Meeting accepted gratefully the offer of the delegation of France to host the next meeting of the Ad Hoc Scientific Group. This meeting will be in September/October 1982 and the Secretariat was requested to make the appropriate arrangements in co-operation with the French delegation. The provisional agenda of the inter-sessional meeting of the Ad Hoc Scientific Group on Dumping as approved by the Meeting under paragraph 3.26 above is contained in Annex 4. *(Part of 11.6 omitted)*
(Annex 1 omitted)

ANNEX 2

PROCEDURE FOR THE NOTIFICATION OF PERMITS ISSUED FOR THE DUMPING OF WASTES AND OTHER MATTER AT SEA

1. INTRODUCTION

1.1 Notification of General Permits issued

The Contracting Parties should send to the Organization, either directly or through a Secretariat established under a regional agreement, by 1 August in each year a record of the General Permits issued in the previous calendar year.

1.2 Notification of Special Permits issued

The Contracting Parties should immediately notify the Organization of each Special Permit issued.

1.3 Details to be notified

The notifications should contain the information requested by the format set out below for each Special and General Permit (unless in any case a particular item of

information is clearly inappropriate). Examples for different types of wastes and other matter are shown in section 3 below. These examples are given solely to illustrate the degree of detail expected under certain headings; they have no other significance.

2. FORMAT FOR THE NOTIFICATION OF GENERAL AND SPECIAL PERMITS

1. Issuing Authority.
2. Permit start date/Permit expiry date.
3. Country of origin of wastes or other matter and port of loading.
4. Detailed specification of waste or other matter and description of the process from which the waste or other matter is derived.
5. Form in which waste or other matter is presented for disposal, i.e., solid, liquid or sludge (in case of liquids or sludges include weight per cent of insoluble compounds).
6. Total quantity (in metric tonnes*) of waste or other matter covered.

* Preferably in metric tonnes; if given in cubic metres, additional information on relative density (specific gravity) should be provided under 2.9.

7. Expected frequency of dumping.
8. Chemical composition of waste or other matter (this should be sufficiently detailed to provide adequate information, in particular with regard to the concentration of substances listed in Annexes I and II to the Convention; concentrations in mass per mass units*).

* Indicate whether on dry weight or wet weight basis.

9. Properties of waste or other matter:

- solubility;
- relative density (specific gravity);
- pH.

10. Method of packaging.

11. Method of release.

12. Procedure and site for subsequent tank washing.

13. Approved dumping site:

- geographical position (latitude and longitude);
- depth of water;
- distance from nearest coast.

14. Additional information with regard to the factors listed in Annex III of the Convention, in particular on the toxicity of waste or other matter (type of toxicity test, e.g. 96-hr LC₅₀, test species used). In case of chemical waste provide any information available on the biodegradability of the waste.

3. EXAMPLES

3.1 Dredged Materials

Item of format

1. (Issuing authority)
2. (15.1.81–31.12.81)
3. (Port of loading)
4. Dredging from (source: estuary, harbour, etc.)
5. Silt and clay, 60% solids content (weight)
6. 50,000 m³
7. once per week
8. levels of contaminants present in solids, e.g., Oil:

200 ppm; Hg: 1 ppm; Cd: 2 ppm; Cu: 50 ppm;
Pb: 100 ppm; Zn: 150 ppm; Cr: 50 ppm.
(concentrations on dry weight basis)

9. -60% insoluble
-1.5 g/cm³
-pH 7
10. Not applicable
11. Immediate release from barge through bottom opening doors
12. Not applicable
13. (approved dumping site)
14. (additional information)

(Part of Annex 2 omitted)

ANNEX 3

GUIDELINES FOR THE STUDY OF THE LONG-TERM STRATEGIES AND OBJECTIVES OF THE LONDON DUMPING CONVENTION OF THE YEAR 2000

The Task Team established at the Sixth Consultative Meeting will prepare a document outlining the long-term strategies and objective of the London Dumping Convention to the year 2000 taking into account the following questions:

1. whether the ultimate goal of the Convention is for the best possible control of the disposal of wastes and other matter at sea or for the elimination of this activity;
2. what will be the role of the London Dumping Convention in the broader problems relating to all sources of marine pollution;
3. what will be the role of the London Dumping Convention in the context of any developing strategy for total waste management;
4. what will be the relationship between the London Dumping Convention and other regional and global agreements dealing with marine pollution in general and disposal of wastes at sea in particular;
5. are there any foreseeable changes to be contemplated in the structure or operation of the London Dumping Convention as it now exists; and
6. are there any other matters that will impinge directly or indirectly the continuing evolution of the Convention.

ANNEX 4

SUBSTANTIVE ITEMS TO BE INCLUDED IN THE AGENDAS FOR THE SEVENTH CONSULTATIVE MEETING AND FOR THE INTERSESSIONAL MEETING OF THE AD HOC SCIENTIFIC GROUP ON DUMPING

Seventh Consultative Meeting

1. Consideration of reports on dumping
2. Report of the Ad Hoc Scientific Group on Dumping
3. Matters related to the dumping at sea of radioactive wastes
4. Report of the Task Team on a long-range strategy for the Convention
5. Promotion of technical assistance
6. Relations with other organizations
7. Future work programme and date of next session

Ad Hoc Scientific Group on Dumping

1. Review of Annexes:

1. review of the list of hazardous materials, in particular with regard to:
 - 1.1 lead and lead compounds;
 - 1.2 pesticides and their by-products;
 - 1.3 organosilicons;
2. development of criteria for assignment to Annexes I and II;
3. guidance for or amendments to Annex III;
4. development of implementation guidelines (e.g. significant amounts, paragraph F of Annex II);
5. review of materials listed in other Conventions (e.g. substances with carcinogenic or similar properties);
6. recommendations for deletions or additions to Annexes.

2. Detailed technical discussion of particular problems:

1. dredged material;
2. technical aspects of the regulation of wastes containing cadmium;
3. review of information on "special care" techniques for the disposal of contaminated dredged material; and
4. exchange of information on the monitoring of disposal sites at sea including deep-sea site monitoring.
3. Consideration of land-based alternatives to the disposal of wastes or other matter at sea.
4. Matters related to incineration at sea.
5. Review of the long-term working programme of the Ad Hoc Scientific Group.

Main Aspects of improving Land-Sea Transportation Systems in connection with Roll-on/Roll-off Ships: Economic Commission for Europe

(Note by the ECE secretariat for the Seminar on Trans-European North-South Motorway Southern Interregional Connection, Athens, Greece, 1-3 December 1981)

1. Recent developments in international trade require reliable, specialized, fast and regular transport lines between the producer and the consignee at lower and stable prices. Consequently, ways must be found to reduce the number of transfer operations between different modes. One such instrument is the land/sea transportation system which is a combination of technical, economical, legal and organizational means of providing door-to-door cargo delivery. The transition from using separate modes of transport for international freight to the land/sea transportation system is based, to a large extent, on the advent of roll-on/roll-off ships.
2. The economies of many European countries are closely linked with sea shipping. In fact, the turnover of goods at the ports of Western European countries is about 28-30 per cent of the volume of the world's sea shipping.
3. In general, 50 per cent of oil, about one-quarter of coal, ore, chemicals, grain and other goods are imported through marine terminals. Two-thirds of general goods exports are

carried by sea.

Distribution of the world shipping
(Goods turnover of marine terminals)

Continent	in % of the world's goods turnover
World goods turnover	100.0
Europe	39.6
Asia	18.4
America	32.3
Africa	7.6
Oceania	2.1

4. One of the characteristic features of sea shipping is the participation of the other modes of transport in cargo delivery.

5. The organization of a "door-to-door" movement of traffic through different integrated modes, including maritime transport, calls for improvements in co-ordination of both operating and investment activities at all links of the transportation chain, both of the national and the international systems.

Technological Relations of Maritime Transport with Other Transport Modes

6. The present interrelations of sea transport with other transport modes are of a substitutional or supplementary character. These manifest themselves in various combinations, such as railway, road, inland waterways and pipelines. Intermodal traffic flows through all available alternative transport routes.

7. Air transport has long been dominating over sea transport as related to transcontinental passenger traffic. As far as freight is concerned, however, air transport is used on a very limited scale. The main factors contributing to decreasing competition from air transport is the expected further rise of fuel prices and the appearance of the latest generation of fast container ships.

8. On some routes, the co-operation of different modes as combined intercontinental air/sea or air/road/sea transport services is considered advantageous. For instance, helicopters may be expected to be used on a much greater scale both during berthing at port and under way (supplying commodities, equipment and food to ships, crew relief, etc.) for ships carrying general cargo or containers.

9. It is generally considered that the substitution of sea transport by pipelines may be beneficial, particularly in cases when the latter provides a considerable reduction in the distance of transfer in comparison with the required sea route. It is interesting to note that the world cost of pipeline transport increases almost in proportion to the transportation distance, while the cost of seaborne traffic increases considerably slower with increasing transport distance.

10. Combined pipeline/sea service which, until recently, has been used solely for liquid bulk cargoes may, in particular cases, find extensive application in the dry bulk cargo trade by using the hydraulic slurry pipeline method to transfer such bulks as iron ore, coal, phosphate, sulphur, etc.

11. The use of adjacent modes of transport calls for a great number of trans-shipment operations and negatively influences the safeguarding and speed of goods delivery and the efficiency of transportation.

12. The solution of these problems calls, on the one hand, for the introduction of transportation systems which would reduce the number of trans-shipment and cargo handling operations and, on the other, for a transfer to the use of standard cargo units. The appearance of specialized vessels (ro-ro, lo-lo, barge carrier etc.) and the growth of the average tonnage, and of the speed of these vessels, gave rise not only to important changes in the technology of sea shipping but also to an increase in the carrying capacity of vessels.

13. Under these conditions, the organization of door-to-door transport services at still lower prices requires new methods of organizing land/sea transportation systems.

14. Today, the effective attainment of these goals cannot be achieved solely by means of improving separate parts of the transportation chain. It is necessary to improve them as a whole. An example is the land/sea transportation technological system (TTS) which is made up of technical, economic, legal and organizational aspects of door-to-door cargo delivery.

15. Transportation services may be offered by the following four main specialized transportation systems:

- (a) unit load system;
- (b) dry bulk cargo system;
- (c) liquid bulk cargo system;
- (d) passenger system—offering tourism, accommodation and food services at hand.

16. There are specialized transportation systems under those mentioned above. For example, within the limits of the unit load system, the following services are of particular importance:

- container system;
- roll-on/roll-off system;
- barge carrier system;
- push tug-barge system.

Amongst these, container services are developing at the highest rate.

17. Today, according to a study undertaken by the port of Rotterdam, 20 per cent of the total international ro-ro traffic is concentrated along the coasts of Europe. Twenty-five per cent of this activity is made up of United Kingdom operations, with a similar proportional breakdown of around the 25 per cent mark on the Baltic Sea and within the Mediterranean. In the Netherlands 97 per cent of the ro-ro movements is United Kingdom bound traffic. It would seem that the share of ro-ro is likely to increase in time at the expense of lo-lo operations.

18. The United Kingdom National Ports Council's studies undertaken in 1978 concluded that, by 1985, unitized traffic may be expected to account for about 33 per cent of non-fuel Southbound traffic (compared with 26 per cent in 1975), growing to just over 35 per cent by 1990. Of that total, at the beginning of the next decade, short sea movements are expected to account for about 75 per cent.

19. The following information indicates the development of the integrated transport concept in actual operations:

Traffic across the North Sea testifies the growing concept of providing the "sea bridge" as part of an integrated transport service.

Two-day trailers are, by and large, predominantly used within approximately a 650 mile route length. This mode benefits from comparatively low costs associated with fast ship turnaround, and from intensive employment of a vessel's earning capabilities. These cost advantages tend to outweigh the inherently high capital costs of ships and trailers.

The trailer-dominated trades between the United Kingdom and southern Scandinavia have, since 1978, seen a surge of commercial co-operation. Multi-purpose ferries operate between the United Kingdom, France and Belgium. British and Belgian ferries have about 18 sailings per day in each direction. Five of the vessels concerned are certificated for between 1,200-1,400 passengers, with car loading in the 220-300 range.

Some 60-80 ferries link the United Kingdom and France, carrying about 80 per cent of the France-British trade.

The Marseilles area and northern Italy, especially, have come to be associated with particularly high use of ro-ro shipping.

A train ferry operates successfully on the line Sljichevsk-Varna.

20. Time-saving and reduction of the total costs of cargo delivery from the producer to the consignee are achieved by the introduction to these transportation systems of modern transportation and cargo-handling techniques based on improved organization of the functioning of each link of the whole transportation chain.

Main Factors Influencing the Development of Shipping Technology

21. The main factors governing the development of new transportation technology are the geographical changes of traffic flows as well as the external shape of cargo, in which some groups of goods are entering the combined land/sea services. This evolution will, in the future, manifest itself first of all in:

(a) the decreasing trend of trading in raw materials and the increase in trading in intermediate and finished industrial products. This trend stems from the quest of producing countries for preliminary processing of some kinds of raw materials at the place of their production instead of in consumer countries;

(b) the trend of increasing the share of seaborne trade of goods whose physical and chemical properties require special transportation, handling and storage conditions (chemicals, nuclear products, etc.);

(c) the trend of adapting general cargo to speedy and reliable cargo-handling methods in the door-to-door transportation service by neutralizing its specific properties and unitizing the shape of package to meet the requirements of the land/sea service. This is clearly seen in the increase of the share of general cargo in the unit load traffic (packages);

(d) the trend of decreasing the average distance in international seaborne trade due to the development of new material sources located near consumer centres and dispensing with or decreasing to a minimum, seaborne cross-hauls.

22. Optimum methods of improvement of the transportation process could be selected considering both the above-mentioned trends and the fact that each kind of cargo entering the seaborne trade imposes upon transport definite

requirements resulting from:

- (a) its physical, chemical and transportation (type of packaging) properties;
- (b) cost;
- (c) weight and volume of separate unit load;
- (d) consignment volume;
- (e) transport chartering terms of contract.

23. Cargo handling operations and the equipment used are important factors in the success of land-sea transportation systems. The major advantage of ro-ro ships over other comparable systems has been its speed of handling.

24. The development of specialized handling systems has played a very important role in keeping land/sea prices competitive, especially for ro-ro. New systems such as LUF,^{1/} although not yet fully engaged in a regular service, might eventually come into use. The advantages of this system are that it offers high handling speeds, lower equipment costs and a lower shoreside labour requirement.

^{1/} Lift Unit Frame. This unit is a 6 m wide by 5 m long terminal trailer equipped with 32 wheels connected to the elevating fifth wheel tractor by a fixed gooseneck. Cargo (or containers) with a total weight of up to 100 tonnes is placed on a 6 m x 5 m pallet. The LUF unit is then positioned beneath the pallet and is elevated hydraulically to lift the pallet off the ground.

25. Traditional handling systems for containers on board ro-ro ships, such as the fork lift truck, will undoubtedly remain in use as they are very cost-effective.

26. Today, the development of handling systems is in the direction of automation. However, it will be a number of years before these sophisticated and expensive systems replace the traditional handling equipment for container ships and ro-ro ships.

27. The main methods of handling cargo are the following:

(1) Trucks and trailers

In this case, the motive power is carried in the ship and is generally driven on board if the ship can discharge at the opposite end from which it was loaded. Otherwise, the self-drive vehicle has to be backed on board or turned within the ship if it has sufficient beam to allow a vehicle to turn round. These self-driven lorries are most often encountered in short sea ro-ro routes and so it is essential that a short sea ship is equipped with both bow and stern ramps, otherwise ship turn-round times become excessive due to the necessity for vehicles to turn.

(2) Trailers, where no motive power is carried on board ship

Special tractors known as "tugmaster", or elevating fifth wheel tractors, are used to transfer otherwise immobile trailers from the trailer park in the port into the ship without the driver having to leave his cab. Invariably the trailer will be backed on board, which involves several skilful manoeuvres. This is necessary to give the minimum space wastage between vehicles, but also to allow the tractor unit to withdraw. On some larger ro-ro's, and also those where the ramp to the upper or lower deck arrives forward of where the rear trailer can be parked, the trailer will be towed on board and then backed into its final position.

(3) Units which can be deposited within the ship

In this case, the transfer vehicle, such as a fork lift truck, picks up a unit on the shore and drives directly into the ship, deposits its load and drives out again. When large units, such as containers or flats, are carried it is quite common for the fork lift to drive in reverse as the load would otherwise obscure his view. Many special ro-ro fork lift trucks are thus provided with dual driving positions to enable the vehicles to move in either direction with equal ease.

Similarly, with the LUF or equivalent system, the cargo is placed on shore on top of a special pallet under which the LUF unit moves, elevates and reverses into the ship. With special LUF vehicles visibility is not a particular problem as the cab can traverse beyond the side of the unit. The pallet is then deposited by lowering the deck of the transporter vehicle.

(4) Units which are fed by lorry, trailer or conveyor into the ship and the block stowed by fork lift trucks or, less commonly, by a van, sideloader or internal crane. This system is a well-tryed and successful method, where the "shuttle" of cargo between the ship and the shore is left to the most suitable vehicle for that purpose. The slower cargo-stowing equipment is thus used most efficiently for the purpose for which it was designed.

Main Ways of Improving the Organization of Land/Sea Transportation Technological Systems

28. The introduction of land/sea transportation technological systems pre-supposes that characteristics of the separate constituent transportation facilities (e.g. vessels, trucks, flats, wagons) must be co-ordinated within this system and optimized at all links of the transportation chain of both national and international transportation systems.

29. Possibilities of achieving efficiency in these systems depends on different factors directly or indirectly affecting the efficiency for both the separate transport modes and the whole land/sea transportation system. Of main importance are the following factors:

- transportation technology and the structure of transport means involved herein;
- technical standard of transport means and the transport infrastructure of the producer and consignee countries;
- speed of cargo delivery and, in this connection, the rate of using the transportation capacity;
- amount and professional skill of labour;
- national legislation;
- concentration of goods flows.

30. As an example, it may be noted that the introduction of large container services in centrally-planned economy countries began when goods owners lacked special means of mechanization, specialized rolling-stock for railway and road transport and only had a limited stock of containers available. Therefore, at the first stage, containers were used only for port-to-port operations instead of for the door-to-door system. As a result, the efficiency of the modern intermodal land/sea service was not attained.

31. The concentration of the flow of goods is one of the

main reasons for the increased efficiency of land/sea transportation systems.

32. Due to the post-war trend of increased concentration at certain points of the world production, sea shipping had to be concentrated to a few but giant national organizations. This restricted the economical activities of individual consignors of small ship loads. It created conditions for rapid growth and stabilization of steady traffic flows conforming to the natural conditions of some economic regions.

33. The further concentration of traffic flows, especially in the general cargo trade may, in the future, lead to the setting up of distribution sea ports providing trans-shipment of general cargo for major European countries.

34. The volume of dry and liquid bulk cargo trade will be moved in the future on a much larger scale by a system of steady and stable traffic between major specialized sea ports having deep-sea berthing and cargo handling facilities, large storage areas and a sophisticated system of intermodal traffic movement.

35. The development of containerized general cargo traffic is first of all determined by the technical and economic conditions providing the introduction (on a mass scale) of containers in the sphere of production, distribution and consumption.

36. This may be achieved by:

- working out economic stimuli to arouse the interest of shippers to use containers for integrated traffic;
- appropriate development of container infrastructure by the countries interested in this type of traffic, including the provision of the industry with the required technical means for producing automated handling and storing of containers;
- eliminating the legal, organizational and psychological barriers between owners of various transport modes.

37. Another major factor affecting significantly the efficiency of ships and marine terminals is the increasing specialization in sea transport.

38. To limit economic risk in building and operating costly large-sized specialized ships, shipowners may, to a greater extent, ensure the long-term transport arrangements by entering into long-term voyage contracts or long-term time-chartering.

39. The forthcoming process of concentration of cargo traffic may certainly cause further confrontations between shippers and ship owners, and, as a result, a trend of possessing specialized fleets by industrial conglomerations might be expected.

40. Experience shows that operation of the sea-ports, being the intermodal technological centres, involves significant potential possibilities for reducing costs, speeding up and improving the traffic.

41. Analysis of today's land-sea transportation technology shows that the efficiency of sea-ports may be increased by:

(a) the introduction of modern cargo-handling techniques of higher productivity as compared to traditional ones. This trend has already become evident in the development of specialized cargo-handling and storage areas;

(b) the increase of the share of unit loads (mostly containers) in the general cargo handled at sea ports. This enables the use of new cargo-handling and storing methods and the removal of a number of operations being carried out outside the port limits;

(c) partial or full substitution of the direct cargo handling method by the indirect one (via transit shed). This is necessary because the increasing demand for a balance between the capacities of major transportation facilities (the seaborne vessel on the one hand and overland transport facilities on the other), and the difficulties in providing synchronized delivery of cargo to the port by different modes of transport.

Management of Land/Sea Transportation Technological Systems and its Improvement

42. For maximum efficient use of transportation capacity within the limits of a system, not only are the existing systems improved, but new forms of organization are introduced to provide the required co-ordination of all links of the transportation chain of both the national and the international systems.

43. The horizontal and vertical forms of co-operation of modes of transport are outlined below:

Horizontal co-operation embraces one mode of transport. The liner conferences are the example of this sort of co-operation in seaborne traffic;

Vertical co-operation is based upon co-operation being developed between various modes of transport.

44. Three stages of co-operation may be envisaged:

(1) **General co-operation** is mainly based on long-term bilateral or multilateral contracts between the participants of the transportation process. These contracts rarely embrace the whole traffic movement as a rule, they are of a general character concerning the storage and transportation capacities as well as the co-ordination of transportation facilities in terms of time, etc.

(2) **Expanded co-operation** concerns not only the above-mentioned general-purpose contracts but some economic and operating problems, such as planning, freight rates, centralized container control, simplicity of trade formalities, etc.

(3) **Fully integrated co-operation** is based upon the division of general funds by all participants. This would include the results of economic activity, risks, legal responsibilities towards the clients, etc.

45. For a higher quality of services offered, centralization is of great importance since a client will only do business with a partner who offers him a stable service through freight rates on a direct bill of lading.

46. The three major types of concentration involved in a transportation process are well known:

(a) **full concentration**: is achieved by integrating all the agencies participating in the transportation unit;

(b) **partial concentration**: is achieved by uniting two or more participants of the transportation system. Port/shipping integration is an example of such concentration;

(c) **centralization of co-ordinating functions**: is where co-ordinating duties of all participants are transferred to a specialized agency.

47. As far as container traffic systems are concerned, centralized co-ordination of transport activities is expressed in the following manner:

(1) co-ordinating duties are carried out by the freight forwarding agent, who organizes the door-to-door intermodal traffic flow, acting as a mediator between the shipping company and shipper on behalf of the latter. In this case, the freight forwarder is not the owner of transportation facilities and he organizes the traffic at the expense of the shipper, using the assistance of other specialized agencies;

or:

(2) co-ordinating duties are carried out by the operator, a specialized agency, which is at the same time, the owner of some transportation facilities, such as: sea ships, land terminals, etc. Relating to the client, the operator appears as a commissioner (authorized agent), assuming all transportation responsibilities;

or:

(3) duties both of the forwarder and operator are carried out on the whole land/sea route by shipping companies. Such highly co-ordinated services are offered at present in relation with containerized general cargoes by shipping companies.

48. The choice of the most efficient method depends on the conditions in which this container traffic system functions (volume and geographical pattern of traffic flow, transportation capacity and the transport infrastructure of the country, etc.)

49. On container traffic systems, a trend is seen for further centralization of the container stock control to minimize empty runs, waiting time and demurrage. In this connection, the development of specialized leasing agencies for containers called "leasing companies", is expected. It is known that, in 1980, 50 per cent of the world's used containers were at the disposal of these companies. Such a container leasing system is in favour of ship owners as it solves the problems of balancing fluctuations in flows of general cargo on some shipping routes—there is no need to transport empty containers in the reverse direction.

Conclusions

50. The influence of maritime transport and especially roll-on/roll-off ships on the work and the organization of inland transport will be increased. A major advantage of ro-ro ships over other comparable systems is the speed of handling operations.

51. The principle means of meeting demands for more reliable specialized, speedy and regular transportation links between the producer and the consignee and offering of transportation services at lower and stable prices is the land/sea transportation technological system.

52. One of the major instruments of the integrated intermodal traffic chain is the information system embracing all links of the chain. Its use in intermodal traffic will play a vital role in developing new traffic systems. The exchange of information between participants may reveal that a number of control units of the intermodal cargo flow could be dispensed with.

53. Further and more detailed examination of recent experience and development in the field of international multimodal transportation may lead to concerted efforts of all parties involved to promote this form of exchange of goods.

A Profile of IALA — Your Friendly Association

The International Association of Lighthouse Authorities (generally known by its acronym IALA) is a non-governmental organisation of Lighthouse Authorities: it brings together the Services of many countries throughout the world which are responsible for the provision and maintenance of lighthouses, buoys and other aids to marine navigation. The main aim of IALA (as stated in its Constitution) is: "To encourage the continued improvement of aids to navigation, through any appropriate technical means, for the safe and expeditious movement of vessels." Other aims include the organising of Conferences and technical discussions, collecting and circulating information about the activities of Lighthouse Authorities, encouraging and making known technical developments, establishing Technical Committees and Working Groups, and giving help to Lighthouse Authorities both in organisational and in technical matters.

History

The idea of forming IALA arose from a series of international lighthouse conferences which were held about every 5 years before and after World War II. At a conference in Scheveningen, the Netherlands, in 1955 it was unanimously decided that a permanent International Association should be formed to give continuity to the work between the five yearly conferences, and that a Secretariat should be established. Thus IALA formally came into being on 1st July 1957, and within 6 months 21 national Lighthouse Services had joined. Today some 80 national Lighthouse Services throughout the world belong to IALA, many Port Authorities worldwide belong as associate members, and some 50 manufacturers of aids to navigation belong as industrial members.

Organisation

IALA is administered by an Executive Committee, which normally meets twice a year. It comprises permanent and elected members. Currently the members are Heads of the Lighthouse Services of Argentina, Canada, Chile, Denmark, India, Japan, England, France, Italy, Federal Republic of Germany, Netherlands, Saudi-Arabia, Sweden, USA and USSR. As the President is always the Head of the Lighthouse Service which hosted the last Conference, the Director General of the Aids to Navigation Department of the Japanese Maritime Safety Agency will hold this position until 1985.

The day to day running of the Association is the responsibility of the Secretary General, who according to the Constitution is always the Head of the French Lighthouse Service.

The members of the Executive Committee and the Secretary General all give their services free to the Association.

The Secretary General is assisted in his work by a small Permanent Secretariat based in the Association's headquarters in Paris.

Membership

"A" and "B" members are national Lighthouse Authorities. "A" members have a vote in the affairs of the Association, whereas "B" members who pay a much smaller subscription only have the right to vote for elected members of the Executive Committee.

Associate members are for the most part Port or Harbour Authorities or similar undertakings that have some responsibility for establishing or maintaining aids to navigation. Industrial members are manufacturers of equipment used by aids to navigation services. Under the constitution, they have the right to show their equipment at exhibitions organised to run concurrently with Lighthouse Conferences.

Personal membership is a new category agreed during the 4th General Assembly of the Association in Tokyo, November 1980. Personal membership is for individuals who are keen to keep abreast of developments in aids to navigation but who are not commercially concerned in the lighthouse business. Free personal membership can be conferred by the Executive Committee upon any individual who is thought to have made an important contribution to the work of IALA.

Annual subscriptions as from 1st January, 1982 are:

A Member	8,000 Swiss Francs
B Member	3,000 Swiss Francs
Associate Member	1,200 Swiss Francs
Industrial Members	2,700 Swiss Francs
Personal Member	150 Swiss Francs

Any organisation interested in or concerned with aids to navigation is very welcome as a member.

Technical Work

The technical work of IALA is achieved through committees of experts drawn from the Lighthouse Authorities of many countries. These Technical Committees study problems of current importance to Lighthouse Authorities and submit their findings to the Executive Committee. After approval by the Executive Committee these findings are often published in the form of official IALA Recommendations.

Technical Committees deal with such questions as radio aids to navigation, buoyage problems, maintaining aids in ice, the conspicuity and surface colours of aids, reliability and availability of aids, marine traffic services, together with other topics of interest to our members. The best known work of IALA Technical Committees is the production in 1976 of the System A buoyage scheme, and the production in 1980 of the first worldwide buoyage scheme: "The IALA Maritime Buoyage System"

Another facet of the work is cooperation with other international bodies. In particular IALA is in consultative status with the Intergovernmental Maritime Consultative Organisation (IMCO) and helps that organisation with technical matters concerned with aids to navigation.

The IALA Secretariat acts as a clearing house for the continuous exchange of technical information, and it also helps to organise assistance to developing countries. Because of the specialist experience of its members throughout the world, IALA can recommend independent experts skilled in all facets of Lighthouse Authority work, such as

civil engineering, the running of a service, and especially maintenance and organisation, and the training of personnel. However IALA does not have the resources to give financial aid this role being played by other international organisations like United Nations Development Programme UNDP.

Close links are also maintained with many other international organisations including IAPH.

IALA Publications

The membership of the Association is kept informed about its work through the medium of the IALA Bulletin which is produced quarterly, and is free to members. Non-members may also subscribe to the IALA Bulletin.

Another quarterly publication is "IALA News" which is a small duplicated sheet distributed free which contains items of immediate interest to members and non-members.

IALA also publishes three other major works:

- An International Dictionary of Aids to Marine Navigation in nine separate chapters.
- A Manual on Radio Aids to Navigation.
- The IALA Maritime Buoyage System.

Benefits of IALA Membership

The principal benefits of IALA membership can be summed up as follows:

The right to attend the five yearly IALA Conferences

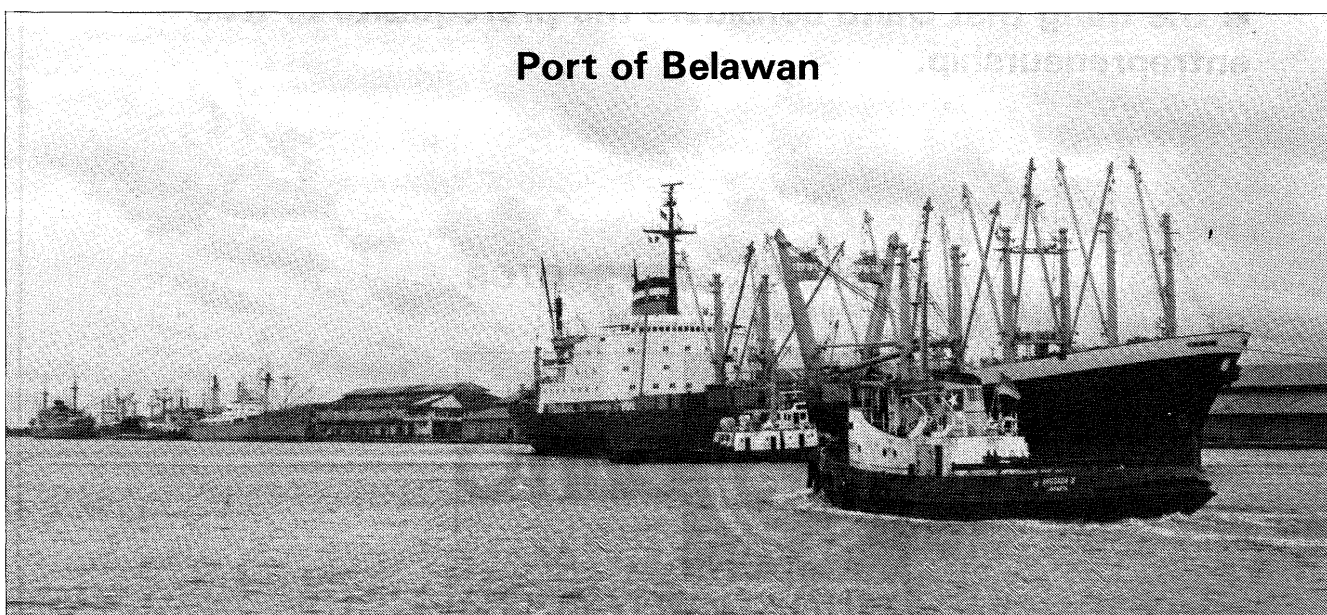
and free access to the very extensive Conference reports which are specialist papers from all over the world on the present state and development of aids to navigation; the continuous exchange of technical information, and the advantage of being able to discuss technical and other problems with those working in the same field; access to IALA publications and to the IALA Bulletin; the ability to contribute through IALA to other influential international organisations concerned with maritime safety; assistance with problems of a technical nature and problems of organisation and training that IALA can provide; and the obvious advantage of belonging to an effective world-wide organisation dedicated to bringing together Lighthouse Authorities, to improving aids to navigation and thus making the oceans of the world safer.

Further Information

Further information about membership, publications and the work of the Association may be obtained from the IALA Secretariat, who will be pleased to help. The address is:

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IMCO/UNEP Guidelines on Oil Spill Chemical Application and Environmental Considerations (a Draft) — (continued from December 1981 issue)

(Reproduced from IMCO document: MEPC XVI/13/3, 25 September 1981)

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7 TOXICOLOGICAL AND ECOTOXICOLOGICAL EFFECTS

When considering the use of dispersants in oil spill combat, one of the most important factors in the decision is the possible effect on the environment in the case of applying dispersants comparing with that when the oil is left alone.

Specific aspects to be dealt with in deciding on the use of dispersants are given in Chapter 12.

7.1 Environmental terms and considerations

Some of the environmental terms and considerations (Cowell *et al.*, 1979), (Baker *et al.*, 1980), (Nelson Smith 1972) are:

- A **population** is a group of all the individuals of one kind of plant or animal in a given area.
- A **community** includes all populations in that area. It may be described in terms of its species composition and abundance (diversity), trophic levels, food-chain relationship and energy flow.
- An **ecosystem** is any biological community together with its non-living environment, interacting in a dynamic equilibrium so long as it is not disturbed by too much stress. Ecosystems are not closed compartments. There is always export and import, depending on the situations of energy, nutrients, detritus, plankton, fish, etc.

The marine energy cycle is presented in a very simple way in Figure 4.

Life in the sea, as on the land, is ultimately dependent on energy stored by green plants (phytoplankton) from sunlight. The phytoplankton function as the primary producers at one end of a "food-chain". They are consumed by herbivorous zooplankton, these by small carnivores, and these again by larger carnivores (including man). Nekton are larger swimming animals and Benthos are bottom-living plants and animals. Energy is not normally transmitted only in a straight line; the situation is more realistically illustrated by a "food web", for example, the one showing interrelationships between plankton and herring, Figure 5.

As far as physical environment is concerned, the sea is rather stable. Temperature changes at any one place are small and take place very slowly. The chemical composition is also rather constant.

The sea-shore presents a different picture. Intertidal zones are periodically exposed to the air, sunshine and to fresh water in the form of rain and river input and dew. They are dried out by the wind. Salinity changes occur. Temperature fluctuations may be considerable. Waves expend their energy in breaking on the shore. Salinity changes also recur in and around estuaries of rivers.

On the basis mainly of sea-water temperature, the seas can be divided into polar (or arctic and antarctic), temperate and tropical regions. Sometimes a

fourth class, the austral or boreal region is distinguished, between the polar and temperate zones.

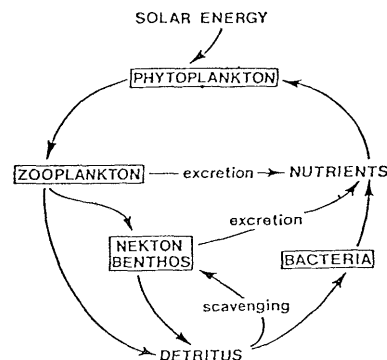


Figure 4. The marine energy cycle (Nelson Smith, 1972)

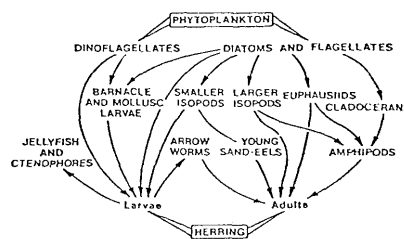


Figure 5. Simplified diagram of feeding relationships between the plankton and herring. Arrows point in the direction of energy flow (from prey to predator). (Nelson Smith, 1972)

7.2 **Toxicology** deals with the relationship between the dose of a poison - in this case oil or oil plus dispersant - and the effects on individuals of a population.

Ecotoxicology deals with the effect of the presence of oil or oil plus dispersant on populations and communities and the composition and functioning of ecosystems.

As in the process of deciding how best to deal with an oil spill, the possible fate and effects of chemically dispersed oil will have to be compared with those of the naturally dispersing slick, the effects of both forms of oil will be discussed from here onward.

The effects can be short-term and/or long-term. They include physical smothering as well as biochemical damage. The effects of an oil spill on a population can be indicated by trained marine biologists, through abundance and diversity counts. Knowledge about the pre-spill situation is necessary. Prediction of lethal or sub-lethal effects in the field, based on laboratory experiments, is much more difficult for several reasons:

- it is difficult to predict concentration and time of exposure of population concerned;
- conditions such as temperature, light and salinity in the field may differ from those in the experiments;
- the stage of development of the population may play an important role;
- the toxic effect may be known but the vulnerability of the population may be much lowered because the species is mobile and may avoid the contaminated area;
- the composition of the oil at the moment of contact could very well be different from the oil used in the experiments.

But there are other effects than these.

There may be smothering of surfaces, loss of habitat such as rocks and sediments. Sediment stability may be lost as a result of the destruction by oil of plant root systems.

Loss of populations, total or partial, may create a food shortage for some species but may be a short-term bonus for others. This results in a disturbance of the structure of the community of varying duration and impact. It is not easy to predict the damage to an ecosystem, nor to estimate the rate, time and extent of recovery. The repopulated ecosystem will not always consist of the same species with similar abundance per species as before.

In these guidelines, all the results of all the toxicological work in this field carried out so far would not be presented. However, some general indications of lethal effect levels are given by a United Kingdom Government source (Cormack *et al.*, 1977) as follows:

TABLE 8

Estimated concentrations of oil components and crude oils expected to cause mortality to different marine organisms

Class of Organism	Estimated continuous concentration (ppm) of oil components expected to cause mortality	Estimated continuous concentration (ppm) of Ekofisk crude oil expected to cause mortality	Estimated continuous concentration (ppm) Kuwait crude oil expected to cause mortality
Larvae (all species) some phyto-zoo-plankton	1	20	25
Crustaceans (lobsters, crabs, etc.). Other invertebrates (worms, etc.)	1-10	20-200	25-250
Fish bivalves (oysters, clams, etc.)	1-50	200-1000	25-1250
Gastropods (whelks, winkles, etc.)	10-100	200-2000	250-2500

7.3 Effect on human health

It is not known whether dispersants increase or decrease entry of oil into food species, but there remains the fact that during a certain period of time there is an increased concentration of oil, when chemically dispersed. Therefore, it is often the practice to avoid the use of dispersants near shellfish areas and to close shell fisheries in the area as a precautionary measure. Tainting of food organisms occurs at lower levels than that likely to present health problems and will prevent their consumption. However, it is not known if the absence of tainting can be used as a criterion for food safety (GESAMP, 1977) (UNEP, 1980).

No reports have been found of epidemiological studies which link gastro-intestinal cancers with the ingestion of oil-contaminated marine fish, shell fish (GESAMP, 1977).

8 TESTING

8.1 General

There are several reasons why dispersants should be tested. It is clearly necessary that they perform well; this will be dealt with in 8.2 - Testing for effectiveness. Then it is necessary that the toxicity of the dispersant itself and that of the dispersed oil be established, see 8.3 - Toxicity testing. Finally, knowledge of the biodegradability is desirable, see 8.4 - Biodegradability.

These data are necessary for predicting the fate and the effect of the application of a dispersant under specific circumstances, for the selection of the dispersants included in contingency plans and for the governmental authorities to decide which dispersants are acceptable for use under particular circumstances. In many countries the approval of dispersants does not mean that they can be used any time the on-scene spill manager decides to use them. Case-by-case specific approval for application will have to be obtained from a designated government official or department. Exceptions to this rule are usually provided for in cases of extreme urgency, such as hazards to human life when high concentrations of hydrocarbon vapour may develop. Governments will also take into account any restrictions imposed by national dumping at sea acts or international conventions.

Governmental authorities generally control the use of dispersant, and some governments have test procedures for dispersant approval. Examples are given in Appendix 1.

The following concerns the objectives for testing, rather than methodology.

No universally adopted test procedures yet exist.

8.2 Testing for effectiveness

Chapter 3 discusses the many factors that bear upon dispersant effectiveness. Additionally, the method of application is of importance.

To allow for all these factors, an ideal test programme might be thought to be one done at full scale. However, the variables encountered, and the undesirability of making frequent deliberate spills militate against this approach.

Several laboratory test procedures have been used, in which small quantities of water, oil and dispersant are mixed in a controlled manner and then left to stand. Observations are made of droplet size, completeness of dispersion, and any resurfacing. Performance of a new formulation can be judged by comparison with one of known utility in the field. (See Appendix 1 for a typical example used in the United Kingdom.)

Such tests do not duplicate field conditions, and their limitations must be

understood. Apparently minor differences in method can result in different ranking of a group of products (Rewick *et al.*, 1981) and reproducibility is not of a high order. Thus such tests are indicative rather than precise. Products giving results close to the pass criterion should be subjected to proper replicate procedure.

The United Kingdom Government approval procedure includes a simple but controlled small-scale sea trial for products that have passed the laboratory screening process. (See Appendix 1.) These tests have a major influence on whether or not a product receives approval, and help to determine optimum dispersant/oil ratios. Results are obtained visually by an experienced observer following the test vessel in a rubber dinghy (Lee *et al.*, 1981).

8.3 Testing for toxicity

As for effectiveness testing, trials to determine toxicity in field conditions are virtually impossible. To ensure adequate controls and a consistent basis for comparison, laboratory bio-assay techniques are used, involving only one or two representative organisms.

Bio-assays present their own difficulties and there are different schools of thought as to, for example, whether a laboratory system should be circulated or not, stirred or not.

The process imposes its own stress on the test organism, whose initial health is an uncontrolled factor. The tests do not give an assessment of sub-lethal effects.

The tests themselves may involve the dispersant alone, an oil alone and oil treated with dispersant. Comparison between the effect of chemically dispersed oil and physically dispersed oil can be made.

The choice of indicator organisms is difficult. These organisms have their life cycles with accompanying changes in susceptibility. There may be a temperature or seasonal effect on susceptibility. Vulnerability may be lowered by the mobility of the species.

In order to be able to predict what the effects are of an actual oil spill, treated with dispersants, it should be remembered that the concentration of the dispersed oil in the upper layer of the water column may be initially of the order of 50 ppm, but will rapidly decrease to levels of 0.1 to 1 ppm in say a few hours and then decrease more slowly to background levels (see Chapter 3.3). In this process weathering takes place, so the composition of the oil will change. It is impossible to imitate this in a simple test. Yet this changing picture is important as to the effect on organisms. Apart from the fact that these low concentrations will have no acute lethal effect on most test organisms, the droplet size and the possible micelle formation are important parameters as to sub-lethal effects.

The problems in designing a test of dispersants to be used on shore are different. The most likely application will be in the intertidal zone on sandy or shingle beaches and rocks. The dispersant will be sprayed on low or incoming tide, on the oil and on the substratum with the living organisms, in or on it, first, exposed to the atmosphere and later submerged and so on. Obviously, this requires a completely different test than the ones used for dispersant application in the open sea.

In view of the problems mentioned above it is interesting to give as an example the reasoning behind the setting-up of toxicity testing for approval of dispersants in the United Kingdom quoted from Fisheries Research Technical Report, Number 39 (Blackman *et al.*, 1977):

SEA TEST

"Rationale"

This test is based on the premise that where dispersants are properly applied at sea marine organisms are exposed, not to a suspension or solution of a dispersant alone, but to a mixture of oil and dispersant. Natural mixing processes through waves may give rise to some physical dispersion of oil within the water column but addition of a dispersant will increase markedly the extent of dispersion, even when additional mechanical mixing energy is not supplied. The test therefore compares the toxicity of oil dispersed under standard conditions of mechanical agitation, with that of the same amount of oil dispersed with an equal quantity of dispersant (or 10% dispersant in sea-water in the case of concentrates) under the same conditions of mechanical agitation.

A major consideration in the selection of a test methodology was the need, for licensing purposes, to evaluate a large number of products on a routine and reproducible basis, and this influenced the selection of the conditions of exposure of the test organisms to the oil or oil/dispersant mixture as well as the level of effect to be measured.

Available evidence (see Table 1) indicates that the chemical dispersion of small slicks in the North Sea, which is generally well mixed, leads to initial concentrations of dispersed oil of up to 50 ppm reducing rapidly to 1 ppm or less within a few hours. It was, however, technically difficult to reproduce in the laboratory a declining concentration of dispersed oil,

and consequently it was decided to base the test on the exposure of a marine organism to a fixed concentration for a fixed period. For routine testing the mortality of the readily available species of brown shrimp, Crangon crangon (L), was selected as the effect to be measured. Developmental work showed that exposure to 1000 ppm of crude oil mechanically dispersed for 100 mins. produced a measurable mortality, and these conditions were subsequently adopted for the test. The concentration of oil used in the test is high relative to those observed in the field, and thus includes a safety factor for species more sensitive than shrimps to the acute toxic effects of oil."

"Results

Tests using fresh Kuwait crude oil show that after 100 mins. at 1000 ppm mortalities generally vary between 25% and 60%. When 1000 ppm oil are tested with 1000 ppm of conventional* dispersants most of the mixtures so far tested cause significantly lower mortalities than the oil control. Where concentrates are used, however, mortalities arising from exposure to the oil/dispersant mixture are similar to, or higher than, those of the oil control.

In determining the acceptable limit of toxicity for the purposes of licensing under the DAS Act, the rationale has been adopted that the use of an oil dispersant should not increase significantly the damage to the marine biota that is likely to result from exposure to the untreated oil dispersed by natural physical means."

* Conventional is used here to indicate those dispersants based on a hydrocarbon solvent and where the recommended method of application is to be sprayed undiluted on to a slick. Concentrates are usually applied as a 10% emulsion in sea-water.

BEACH TEST

"Rationale

The intertidal zone may be of value to commercial fisheries, particularly for molluscs, i.e. oysters, mussels, cockles, etc., or may be primarily of amenity interest, whether as bathing beaches or accessible rocky shores. In general it is recommended that dispersants should not be used on oiled shellfish beds until the latter have been immersed by the tide, in which case the dispersants passing the sea test may be used. Where oil is stranded on amenity shores however, dispersants will be applied directly to the exposed foreshore and direct spraying of intertidal organisms may occur.

Although toxic effects of spraying are likely to have only limited impact on commercial fisheries, e.g. cockles on sandy shores, the death of grazing organisms such as gastropods (winkles and limpets) can lead to significantly deleterious ecological changes due to extensive uncontrolled seaweed growth. Consequently a toxicity test has been developed using a typical intertidal-grazing organism (the common limpet, Patella vulgata (L)), following the earlier description of the effects of oil on that organism (Dicks, 1973).

When dispersants are used to clean oil from beaches, animals are exposed to very different conditions from those at sea. Both oiled and unoled animals may be exposed to undiluted dispersant and left in air until the incoming tide, or the use of water hoses, washes off the contaminants. The toxicity test of dispersants for beach use has therefore been based on these exposure conditions.

Preliminary tests in the laboratory showed that the mortality of limpets exposed to oil is high and the detection of a toxic effect due to the dispersant over and above that of the oil would be difficult and less accurate than determination of the effect of the dispersant alone. Additionally, dispersant is likely to be applied over wide areas of beach and the evaluation of a particular dispersant should also take into account the effect of the dispersant on those parts which are unoled as well as those which are oiled. Therefore, the test finally adopted was designed to assess the effect of spraying dispersant on unoled limpets. The amounts of dispersant sprayed on the test organism were based on the density of spraying likely to be encountered in practice. Similarly, the test sought to simulate the initial exposure to dispersant for an average period of 6 hrs. followed by successive tidal rinsing. In order to compensate for seasonal variations in the susceptibility of the test species, the effects of a standard oil alone were also assessed."

"Results

Exposure of the test organisms to fresh Kuwait crude oil leads to mortalities of between approximately 60% and 90% on completion of the test. Mortality due to dispersants varies from 20% to 100% but the majority of dispersants so far tested yield mortalities significantly less than that of the oil "control".

Dispersants for use on beaches are therefore approved on the basis that they should not be more toxic to the test organism than oil itself, on the premise that the use of the dispersant on organisms that are unoled be

no more damaging than the effects of the oil in the absence of spraying. In establishing the beach test, it was recognized that dispersants and oil/dispersant mixtures would be washed off by the incoming tide and could then affect sublittoral communities. Since such exposure would be to a suspension in water, the controls of the sea test are relevant and dispersants are not approved for beach use unless they also pass the sea test."

8.4 Testing for biodegradability

Biodegradation is the main process that disposes of the dispersants introduced into the environment. When ultimately the dispersant molecules are not attached to oil droplets, they will form micelles in the marine environment which could, if present in high concentrations, damage the cell membranes of the biota. In this respect, it is desirable that they are metabolized by the micro-organisms in the sea at a rate comparable to that of oil. It is also important that the metabolites have a low toxicity. Canada, for example, screens dispersants by a standard 20-day product degradation analysis and by comparing the effects of exposure of rainbow trout to "fresh" dispersant with those of exposure to biodegraded dispersant. The biodegradation products must not be more toxic than the dispersant itself. (Fingas et al., 1979.)

8.5 Information on testing of dispersants

Information on dispersant test procedures and criteria for effectiveness, toxicity and possibly degradability can be obtained upon request from IMO Technical Services Department, (IMO to complete the reference).

9 MONITORING AND ASSESSMENT

In environmental management decisions are most often made in a context in which the consequences of the options cannot be fully predicted. The underlying reasons are inadequate scientific understanding of the functioning of the environment and of how physical/chemical processes work, and inadequate data for the phenomena and the locality under study.

In order to verify and if necessary correct the predictions, situations will have to be assessed based on data collected by monitoring, i.e. the collection of systematic measurements or observations in a defined area for a predetermined purpose.

Assessment is the result of processing these data, expressed as a description of a situation in accordance with the purpose of the exercise.

Monitoring for determining the pathway and fate of untreated and treated oil slicks

For untreated oil visual observation is the most practical method, preferably from the air, although mistakes are possible (algae have been mistaken for oil slicks for example). Remote sensing with the IR/UV line scanners and with radar is being practised in certain countries (White et al., 1979, Backlund, 1979).

Weathering, mousse formation and consequent viscosity increase can be followed qualitatively by observation, quantitatively by sampling and measurement.

For treated oil, if part of the slick remains on the surface, this can be monitored as above. During dispersing operations such monitoring is in any case necessary to guide the operation and verify its effectiveness.

The dispersed oil can only be monitored by sampling and analysis. Simple overall concentration can be determined, or detailed component analysis undertaken, if necessary. Control sample analysis is necessary for good interpretation of the results.

Monitoring for possible ecological damage

Ideally, this requires good long-term base line studies. In the absence of these, one can resort to studying ecologically similar ecosystems that are not affected by oil or dispersed oil from the spillage one is dealing with. This may be desirable anyway, as ecosystems can vary considerably as to composition and functioning with time. The assessment of the situation right after the impact compared with that of the base line study indicates the short-term damage. Predictions can then be made about long-term effects, including indirect effects on neighbouring ecosystems, on the basis of knowledge and experience; these, however, are no more than predictions. They should be followed up by other studies over a period of years, if one really wants to establish whether or not there are long lasting effects and how important these are. Natural changes, such as occur in ecologically similar areas, not affected by the oil, should be taken into account, when interpreting the results, as they are not infrequently of a similar magnitude.

Monitoring to assess the vulnerability of environmental compartments

This is necessary to be able to establish, as a part of the preparation of contingency plans:

- the best way to deal with an oil spill in a particular environment;
- the best way of handling the oil, when it approaches and when it has entered this environment;
- priorities in oil spill combat when several compartments of the environment are threatened or affected, taking into account the available means and the means that can be marshalled;

Topics

- where and in which compartments to carry out the base line studies mentioned above.

Important elements i.a. are the characteristics of the oil on arrival, its persistence, seasonal variations in distribution and life cycle of important species, the duration of exposure, importance of possible impact on neighbouring compartments, possibility of replenishment of populations from neighbouring compartments.

In Chapter 11 the vulnerability ranking of Gundlach et al is followed.

Reporting the results of monitoring and assessment

It is very important that results are openly published and should include accurate data on dispersant application and effectiveness, since experience and a better understanding of the processes and of the impact of dispersed or untreated oil on the environment will improve the quality of decision-making in the future.

10 OTHER OIL SPILL CHEMICALS

These guidelines are about the particular oil spill chemicals called dispersants. Other uses of specialized chemicals are briefly mentioned here for completeness.

Chemical barriers or Herders

Chemical barriers are used to prevent a spill from spreading and to reduce the area of sea covered by a slick, so that pumping becomes possible.

Chemical barriers are applied around the spill. They are mostly effective if there is a hard material (e.g. dock, boat, boom, etc., on at least one side).

Chemical barriers are not frequently used. They are almost ineffective in open sea or when the slick is thick. Their use is strictly limited to small spills in sheltered waters. However, they can also be applied to prevent oil from sticking to beaches or structures.

Sinking agents

Sinking agents act in the same way as absorbents but their density is higher than that of water so that they sink with the adsorbed oil.

Sinking agents may seem to be very efficient in open seas to clean the surface. However, they only transfer the oil pollution from the surface to the bottom of the sea where biodegradation is difficult. They should not be used and they are generally not permitted.

Emulsion breakers

These products are used to break the water-in-oil emulsions (also called "chocolate mousse"). They are added in the pumping device and play their role in the first storage tank where oil can be recovered as the upper layer and clear water discharge from the bottom of the tank.

Products are available today which do work although it would appear that there is a problem with weathered emulsions or when the oil spill contains debris.

These products are new weapons to fight an oil spill. They were used at the AMOCO CADIZ spill and several trials have been made since then.

Gelling agents

Gelling agents are chemicals which can, when added to oil, gel the oil in a semi-solid form which can then be recovered. They are not yet proven operationally.

Nutrients

Nutrients are products used to help bacteria biodegrade oil. They are still in a research stage and cannot be considered as operational at the present time.

Burning agents

Burning may occur spontaneously but generally it is prevented by heat transfer to the sea, and the rapid evaporation of the light constituents of the oil and the thinness of the slick. Some products are marketed to ignite an oil spill but they have generally proved to be of little effect.

11 ECOLOGICAL CONSIDERATIONS FOR DIFFERENT CIRCUMSTANCES OF A SPILL

11.1 In the open sea

The resources that could be at stake are, among others, birds, especially the surface feeding migratory birds, fish spawning grounds, fishing areas.

When a slick moves towards one of these targets, and natural dispersion and/or physical containment and collection are not effective, dispersant application should be considered, to keep the floating oil away from these targets. The ecological impact of dispersant application on plankton is considered as minimal. Dispersants should not be used if oil in the water column would cause more severe damage than the untreated slick.

Natural dispersion will in any case take place but is more likely to occur in the high wave energy temperate zones and in the tropics than in the lower energy energy arctic regions.

11.2 Inshore and onshore

A number of different habitats* will be discussed with some general remarks as to possible application of oil spill chemicals. These remarks are generalized statements which require caution. The ecosystems of the same type of habitat may vary considerably with their geographical location, and ecologists or marine biologists need to be consulted as to the best way of handling the oil once it enters the inshore area. Some countries do not allow dispersants for shore clean-up as a matter of principle.

As with rare exceptions dispersant application on shore is followed by transferring oil and dispersant to the sea, either by tidal action or hosing

* Habitat is the physical location of an ecosystem unit. It may be, for example, a coral reef or a gravel beach.

with sea-water, the impact of this on the near-shore ecosystems has to be balanced against the advantage that may be gained on-shore. It should be realized that the biota on-shore are not exposed to a low concentration dispersion, but to direct contact with oil and dispersant together, or to dispersant alone, in places where spraying takes place and oil is not present. Therefore toxicity results from tests with chemically dispersed oil are not valid. Special tests have to be carried out in which the organisms are in direct contact with the dispersant, such as the United Kingdom limpet test described in Chapter 3.3.

These considerations must be kept in mind, when reading the discussion of the habitats hereunder. Gundlach and Hayes have developed a shoreline vulnerability model, based on field studies of oil spills and on a review of literature (Gundlach et al, 1978 and 1981). These references and several others (UNEP 1980), (Ercan 197), (IMCO 1980), (I.P. 1979), (Baker et al, 1980) (Ray 1980) have been used for the discussion. The description and ranking as to vulnerability are mostly quoted from Gundlach 1981. They are important for establishing priorities in the use of means of protection (booms for instance) and in clean-up activities on-shore. They also indicate which ecosystems should be considered for base line studies in order to be able to demonstrate possible damage or effects after a future oil spill.

The proposed environmental classification and ranking as to increasing vulnerability to oil (Gundlach et al, 1978) is as follows:

1. Exposed rocky headlands

Wave reflexion keeps most of the oil off-shore. Generally, no clean-up is necessary. Oil removed naturally within weeks.

2. Erosional scarps

Steep wave-cut scarps, 0.5 to 2 m high, commonly in clay and located along the mainland edge of the back-barrier lagoon or on dredge spoil islands. Waves would remove deposited oil within a few months after impact.

3. Eroding wave-cut platforms cut into crystalline or sedimentary rock

Wave swept. Most oil removed by natural processes within weeks.

4. Fine grained sand beaches

Little penetration into the beach because of compact sand. Thin buried layers of oil may persist for up to a year. Oil on the beach can be removed mechanically. Dispersants (no concentrates) sprayed ahead of the upcoming tide can be considered for polishing after mechanical clean-up, as an alternative to use of the hot water high pressure lance. Adhesion of oil to sand may be prevented by applying herding agents.

5. Coarse-grained sand beaches

Greater penetration. If wave action is low, oil may stay buried for up to several years. If wave action is high natural cleaning occurs in several months. If clean-up is necessary, mechanical means should be used.

6. Gravel and shingle beaches

Oil will penetrate rapidly. A solid asphalt pavement may form under heavy accumulations. Clean-up should concentrate on the high-tide swash area, when the open structure which allows oil penetration also facilitates its removal following dispersant application. (No concentrates.) This is particularly so if wave action is high enough to cause the gravel or shingle to move. If wave action is not enough, hosing with sea-water can be carried out with good effect, provided it is done at the land/sea interface; otherwise hosing will result in washing the oil down into the gravel or shingle.

7. Exposed, compacted tidal flats (low biomass)

Comprise large expanses of bay and lagoonal shoreline; characterized by an extremely long, flat topographic profile; covered by salt crust and algal mat; low species diversity. When the flats are covered by water (during winter and storm tides), oil would be pushed across flat

surface by waves and tidal currents. Biological damage and long-term oil persistence would be low along lower edge of flat, with damage and persistence increasing toward upper edge. No dispersants. Sorbents could be used in isolated oily pools.

8. Exposed compacted tidal flats (moderate to big biomass)

Have the same characteristics as the low-biomass tidal flats (ESI 5) but the diversity and density of species are greater. Expected biological damage is greater. Clean-up should concentrate on oil removal along high-tide swash areas; heavy equipment should be limited because of tendency to mix oil into the substrate.

9. Sheltered rocky shores. Areas of reduced wave action

Oil may persist for many years. Clean-up is not recommended unless oil contamination is very heavy. High pressure spraying removes algae and animal organisms, low pressure washing is less damaging. Diluted dispersants can be used with care, and warming the water can be helpful in colder climates. Both approaches can be damaging, however, and this must be taken into account.

10. Sheltered tidal flats

Composed of mud or silty sand; sheltered from strong waves or tidal currents. Oil may persist for several years; biological damage may be great, depending on extent of infauna. Mechanical and manual clean-up should be carefully controlled to prevent further mixing of oil into the substrate. These areas should receive priority protection by using booms and sorbents. No dispersants.

11. Marshes and mangroves

Most productive of aquatic environments. Oil may persist for years. Cleaning of salt marshes by burning (not in spring or early summer) or by cutting should be undertaken only if heavily oiled. Heavy traffic of vehicles and manpower should be avoided. Protection of these environments by booms or sorbents material should receive first priority. No dispersants.

Coral reefs are difficult to place in the above ranking when vulnerability to oil pollution is the yardstick. According to the latest survey (Ray 1980) of present-day knowledge they seem to resist with their built-in defence mechanisms occasional moderate oil exposure rather well. High level chronic exposure and also a one-time large oil spill give a severe impact to shallow and exposed coral systems. Long-term effects are not well understood. With present-day knowledge, dispersants should not be used in close proximity to a reef system.

The protection of highly vulnerable areas may require use of dispersants if this can be done in off-shore waters of sufficient depth to allow dilution of the dispersed oil to safe concentrations before it can reach the shore.

Man-made structures, marinas, jetties, slipways, platforms, etc., can be cleaned by high pressure water, by steam, and by hydrocarbon solvent based dispersant with subsequent hosing. The possible effect of the run off on the environment should be considered. If necessary, it should be contained and collected.

12 CONCLUSIONS

These guidelines have attempted to direct attention to those factors that should be considered when deciding to use or not to use a dispersant for oil spill combat.

In most circumstances there are both benefits and disadvantages from the use of dispersants. Thus the choice is not simply a matter of assessing whether or not dispersed oil is toxic, but whether its toxicity is such as to outweigh the damage that will result from the impact of untreated oil which has escaped attempts at physical removal from the sea surface.

In the right situation, dispersants can be a valuable weapon in the cleanup armoury, but they must be used selectively to protect specific targets and not merely to hide a problem. In massive spill situations they can be used alongside mechanical methods, but it should be realised that in such cases even the use of all resources at once will probably not prevent beach pollution somewhere.

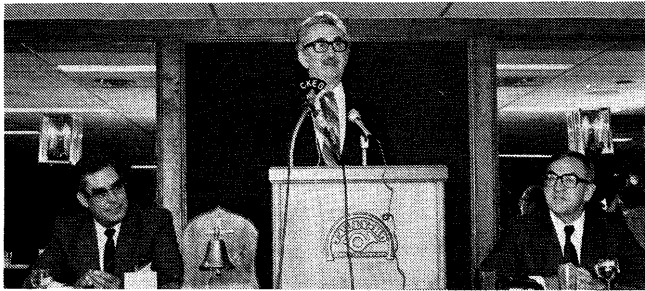
Faced with this reality, contingency plans must lay down priority areas for protection and indicate in advance what cleanup methods are preferred.

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Canadian Port and Harbour Association's 23rd Annual Meeting held in Nanaimo



Picture shows from left to right: Don Rawlins, Chairman, Nanaimo Harbour Commission, Nanaimo, British Columbia; The Honourable Jean-Luc Pepin, Federal Minister of Transport, Ottawa, Ontario; Ray Beck, Port Manager, Port of Halifax, Halifax, Nova Scotia.

(The Hon. Jean-Luc Pepin's speech delivered at the 23rd Annual Canadian Port and Harbour Association meeting, Nanaimo, B.C., September 14, 1981, was featured in the last December issue of this journal.)

Opening of Duke Point port was highlight of conference : Nanaimo Harbour

Events in the opening day of the 1981 Canadian Port and Harbour Association annual meeting in Nanaimo were capped September 14 by the official opening of the Nanaimo Harbour Commission's new Duke Point deep-sea berths.

With snips from scissors held by Federal Transport minister Jean-Luc Pepin, and Sandy Peel, deputy minister of the B.C. Ministry of Small Business and Industrial Development, a scarlet ribbon was cut and the \$21 million facility was officially open.

Covering 67 acres centred on a 200 metre long deep-sea berth and a floating ramp barge berth, the new facility will handle forest products as an adjunct to the three Inner Harbour berths already being operated by the Nanaimo Harbour Commission.

The official party were also the first people to come ashore over the new dock, having come to Duke Point from the annual CPHA convention aboard the cruise ship Malibu Princess. More than 200 CPHA delegates, their wives and staff, contractors and local dignitaries were gathered for the opening ceremonies.

Introduced by NHC Chairman Don Rawlins, Newell Morrison, the chairman of the B.C. Development Corpora-

tion who developed the 360 acre industrial park which surrounds the new berth on Duke Point, told the gathering that he had been delighted to have been a party to the immediate success of the project.

He said that BCDC was actively pursuing tenants for the park, and predicted that "we'll be having another official opening ceremony out here before too long."

The final word in the dedication ceremony was left to federal Transport Minister Jean-Luc Pepin, who said that Duke Point was a good example to him of why people went into public life "... to make a contribution to the common good, and show an eagerness to take part in a mutually constructive project."

"I credit Don Rawlins and his staff for practising the Art Of The Possible for making this happen. There were difficulties along the way, many might not have proceeded, but Nanaimo did, and there is the result."

Saint John Ports Days marks harbors' 10th anniversary

This Canadian port city's 10th Anniversary as container operators was marked this month at the annual Saint John Port Days which greeted a record crowd of nearly 600 from Canada, the U.S. and abroad.

Speakers at the two-day event unilaterally praised the facilities, investment and work force, but also urged the port to keep a sharp eye on rising costs—such as port user fees—which could reduce the flow of cargo here.

Peter G. Pike, Director of International Operations for Associated Container Transportation (Australia) in London whose ACT/PACE line was the first container carrier to make a commitment to Saint John in 1970, was a featured speaker.

"Being here today makes me aware that other ocean carriers have discovered what we at ACT (A) identified in the first place. The location, investment, productive labor force, and total dedication to the intermodal concept has turned Saint John into the leading gateway for Canada's commerce and places the port into the top three in Canada as well."

He added: "Clearly, your people here are not content to rest on their reputation", citing marketing efforts and the on-going expansion and development of new facilities. Noting that the high cost of energy will lead most ship-owners toward slower vessel speeds for conservation measures, he said: "This will inevitably lead us to seek higher productivity and an overall faster turnaround in the ports. We cannot therefore sit back on our laurels and we do not expect you to do so either."

Canadian Minister of Transport Jean Luc Pepin told the group that governments must spend money carefully "because there is too much to do and not enough money to do it all." Pepin had come under attack for a recent announcement that severely curtails rail passenger services into Canada's Atlantic provinces for budgetary reasons.

He observed that Canada has a reasonably good transportation system, subsidized adequately by government money, and quite safe. But, he added, there is always room for improvement and with the need for fiscal restraint "my vision and yours of the ideal transportation system will have to be tempered."

He congratulated Saint John on its emergence over the last decade and noted the federal government's participation in that growth.

(Continued from page 35)

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U.S. Federal Government seeking to minimize Role in Seaport Channel Development

By Mark E. Tomassoni, Senior Associate, SIMAT, HELLIESEN & EICHNER, INC.

Proposals to eliminate the U.S. Federal government's payment for channel development are nothing short of revolutionary. For the first time since 1824 when the U.S. Congress gave responsibility to the Army Corps of Engineers to construct and maintain deepdraft harbors and channels, the Reagan Administration is proposing to give the job back to local governments. To cover expenses, a port user charge is under discussion requiring vessel owners in foreign trade to pay for using the channel.

Federal versus Local Share

The debate currently being waged in Congressional subcommittees is "how much" of the job should be handled by the federal government, and how much by the "locals." With channel deepening projects at ports such as Baltimore and Hampton Roads estimated to require upwards of \$500 million each, the percentage share formula becomes crucial.

In testimony before the U.S. Senate Subcommittee on Water Resources, David Stockman, Director of the Office of Management and Budget, argued that 100 percent of the costs should be accepted by local governments for commercial-industrial dredging services. Some fair share would be covered by the federal government to cover the uses by the U.S. Navy and other governmental purposes. According to Stockman, the 100 percent local funding would "lessen the distortions on the transportation system resulting from the federal subsidy for dredging." He added that "not requiring the users to bear the full cost of their activities encourages over-development of high cost ports because dredging becomes a free good."

The Administration's proposal is designed to institute a "market test of the value of port maintenance and development (and) will eliminate dredging that users are unwilling to pay for, and thus help to establish quickly where dredging is economically viable," Stockman added.

Methods of Payment

The Administration further suggests 3 ways in which a local government could pay for its new channel:

1. The project could be completed by the Corps of Engineers, initially at federal expense, but with federal costs reimbursed by a local government at the yield for U.S. Treasury notes over a period of up to 50 years;
2. The project could be completed by the U.S. Corps of Engineers, with financing provided by the local government by whatever means available; or
3. The project could be handled without any federal involvement, while still subject to applicable environmental and safety requirements.

Historical Constraints

Historically, two major constraints have stymied U.S. harbor deepening projects since World War II: permitting and financing. Typical dredging projects in the U.S. have averaged more than 20 years from the time of initial permit application to the completion of design and construction. Under existing federal funding procedures, dredging proposals must wend their way through 19 multiple stages of review before work actually begins.

Funds for dredging have not been appropriated by Congress for any of the major U.S. ports in recent years. Authorization of funds, required prior to appropriation, has been approved for Baltimore, and Corps of Engineer studies have been completed for Hampton Roads, Mobile, and New Orleans.

The Administration's proposal of 100 percent local funding is strengthened by the historically small level of federal dredging financing. In fiscal year 1980, the Corps spent only \$297 million for capital and maintenance projects for all U.S. harbors. To eliminate this level of funding for U.S. port channel projects will probably have little ill effect since it is dispersed to the entire system of U.S. ports.

Stockman argues that the elimination of this federal budgetary allocation will be a significant factor where new development should take place. Moreover, by implementing user charges, federal funding would not be a constraint on the construction of well justified projects. Finally, the willingness of local government, industry, and private investors to bear the costs of new projects would be the best test of probable worth.

Small Port Concerns

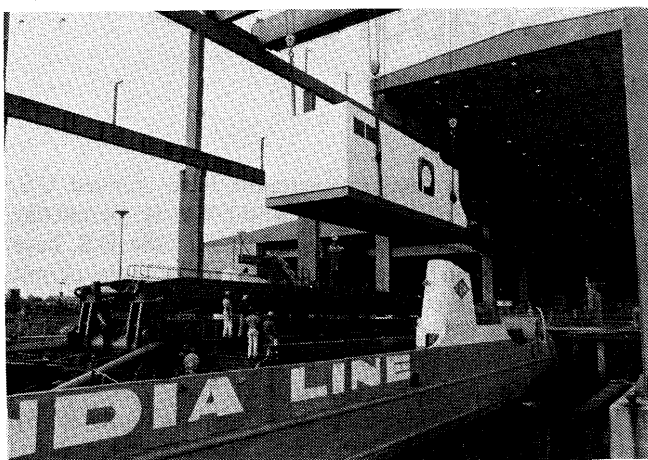
One group countering the Administration's 100 percent local government share are port officials representing small and medium size ports. They maintain that ports currently not possessing 40-foot channels should be offered federal financial assistance to reach 40-feet since existing deepdraft ports have enjoyed federal assistance in achieving their respective draft levels.

Port of Rotterdam Experience

This particular position of the small port officials has precedence at the Port of Rotterdam where the national government assists in deepening to 57-feet. But beyond that depth, local governments are expected to cover expenses through user charge systems and surcharge mechanisms. Rotterdam currently has 68-foot channel depths and is seeking to dredge to 72-feet, a significant depth by U.S. standards. The Dutch government is contemplating guaranteeing the public revenue bond issue to be released by the City to cover the expense of dredging. This is an option that should receive additional attention in U.S. Congressional debate.

The outcome of the U.S. channel deepening issue is far from resolved, although Stockman indicated that final legislation should be signed before the end of 1981.

PACECO 30 LT Portainer heads for St. Croix



The above 30 LT Economy Portainer* is shown being loaded at Paceco's newly expanded 100 acre plant site, located on deep water near Gulfport, Mississippi.

The 30 LT Economy Portainer* is one of 14 standard models of dockside container handling gantry cranes designed and manufactured by Paceco.

This particular Portainer* was modified for the specific needs of its new owner, Hess Oil Virgin Islands Corporation. Some of the modifications include increased trolley speed (150 to 300 FPM), a self-container power system (diesel/electric) and a telescoping spreader enabling it to handle 20', 35', and 40' containers.

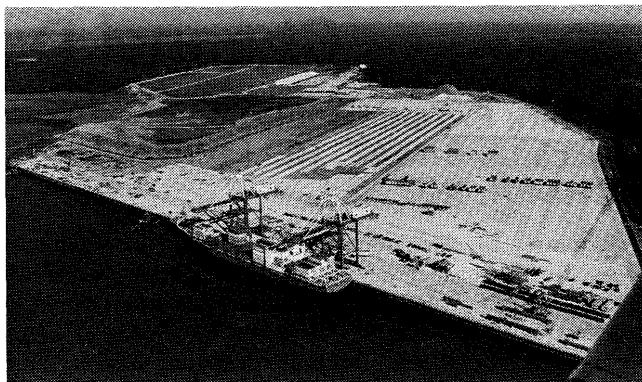
PACECO moves world headquarters after 58 years

Paceco, Inc., a Subsidiary of Fruehauf Corporation (an Associate Member of IAPH), recently completed its headquarters move from Alameda, California, to Gulfport, Mississippi. Paceco, a major designer and manufacturer of container handling cranes, has invested over \$26,000,000 in expanding and improving its existing 100 acre Gulfport facility. The under-roof fabrication area has been doubled and now covers 450,000 square feet (more than 10 acres) including a new 58,800 square foot air conditioned machine shop.

The fabrication area is connected by rail to Paceco's new 38,650 square foot environmentally-controlled metal preparation and coating facility and is within walking distance of Paceco's new three story headquarters building. The plant is located on the Harrison County Industrial Seaway and is one of the largest and most modern plants of its kind.

Activities at the plant include heavy steel fabrication of container handling, bulk handling and heavy lift cranes for onshore and offshore application as well as contract manufacturing and fabrication for the offshore industry including complex sub-assemblies requiring sophisticated machining capabilities. Currently there are 720 Paceco, Inc. designed cranes in operation in over 120 ports around the world.

Official "opening for business" of new 561-acre complex, Port of Charleston's Wando Terminal



The Port of Charleston's Wando Terminal opened for business November 12 with Dart-Orient Line's "Dart Atlantica" making the initial call. The first of three berths opened with two of four container cranes to welcome the container ship. The other two berths and cranes, along with 100 acres of paved backup area, will be ready for service by the spring of 1982.

70th AAPA annual convention : Port of Los Angeles

• Dredging user fees

Drew Lewis, Secretary of Transportation, restated the Reagan Administration's commitment towards dredging user fees at the 70th Annual Convention of the American Association of Port Authorities, but added the government is "open to suggestions and advice" from the port community on the subject.

Addressing the opening meeting of the five-day session at the Los Angeles Hilton, Lewis said "we must find new and creative solutions to problems." He said in late August a policy formulation team began reviewing all maritime policies and regulations. The Administration plans to have a maritime policy on the table, "hope-fully in early 1982," he predicted.

More than 1,000 port officials and their families from 27 nations in the Western Hemisphere are attending the Port conference which is designed to address a wide range of port subjects.

One of the major issues facing U.S. ports today is the plan by the federal government to recover dredging costs by charging fees to users of ports. Traditionally, the government had paid the entire cost of main channel dredging out of the federal budget.

"Let me say that while we need a user fee approach to the waterside costs of port development, we do not want to introduce a cost recovery system that is unfair to any particular port or port range . . . we are willing to look at other approaches, we are not locked in," he said. We have welcomed "thoughtful alternatives" which have been introduced in Congress, he added.

User fees, he said, had another advantage. Under such a recovery of costs program, dredging programs would not have to move through the congressional approval sequence,

thus dredging projects would proceed much quicker. In addition, the Reagan Administration will continue to endorse the fast-tracking plans to expedite dredging by removing as many bureaucratic impediments as possible.

● Coal ports and federal assistance

U.S. ports and waterways will have to depend less on federal assistance and more on their own resources in the future, according to three Reagan Administration officials who addressed the 70th annual convention of the American Association of Port Authorities.

During the same meeting Tuesday, Dr. E.L. (Roy) Perry, Executive Director of the Port of Los Angeles, said that ports in the 1980s face a paradox of greater costs and fewer available resources for project financing.

The convention, in the third day of its five-day schedule, is being attended by more than 1,000 persons from 27 Western Hemisphere nations.

Representing the Reagan Administration were William H. Morris Jr., Asst. Secretary of Commerce for Trade Development; William R. Gianelli, Asst. Secretary of the Army for Civil Works; and Admiral John B. Hayes, Commandant of the U.S. Coast Guard.

Morris focused on the nation's potential to reduce its trade deficit by "making coal the greatest commodity in our export trade."

With 475 billion metric tons of recoverable coal in the U.S., he said the country can meet world needs "but we have to convince our customers we can be the most reliable supplier."

The Reagan Administration, Morris emphasized, is attempting to streamline the permit process for dredging channels and building new facilities to accommodate the deep-draft coal carriers.

"But today money is tighter than it has ever been," he added, "and we cannot expect Congress to fund (coal terminals)."

Instead, he said an "economically rational" coal production program is needed. By this, he meant only a limited number of ports should get into the coal terminal business.

"The real need is for a modest number of strategically located deep-draft ports," Morris said.

A federal philosophy similar to the one for new port coal facilities will also apply to other harbor and waterway projects—streamlining regulations, speeding up the issuing of permits, but substantially reducing federal funding.

Asst. Secretary of the Army Gianelli assured port officials at the meeting that "the present principles and standards for water projects will be rescinded" because they are "a deterrent and not an assistance" to new projects.

He added, "but it's not going to be possible to have 100 percent federal financing as in the past."

"Well planned projects with well planned budgets will move quickest ahead and have the most support from the Reagan government," Gianelli said.

Federal cost cutting will also impact Coast Guard services, according to Adm. Hayes.

"The Coast Guard is taking a hard look at the whole issue of vessel traffic services," he said, "and the possibility of private interests or ports themselves taking some of the responsibilities."

A reduction in "routine safety and environmental patrols" is likely, which Hayes said "means more involvement of ports."

With the government intending to pay for less, Port of

Los Angeles Executive Director Perry sees a dilemma—costs are soaring while funding sources are drying up.

He pointed out that the cost of a container wharf was \$1,400 per linear foot in 1968, \$8,300 in 1978 and approximately \$16,000 next year.

Put another way, Perry said that a 50 acre terminal built in 1968 only has to handle 280,000 tons of cargo annually to amortize the cost of the facility, while a new facility would have to handle 925,000 tons annually to amortize its construction costs.

While costs escalate, he noted that ports will be getting less capital from federal funding, private financing, revenue bonds and their own operating revenues.

● Resolutions

Port officials from 27 nations are encouraging the U.S. government to promote new measures to assist rather than hinder maritime industry operations.

The officials from nations in North, Central and South America and the Caribbean expressed consensus views on several issues.

Forty resolutions were passed by the AAPA delegation during the fourth day of the five-day event.

Some of the actions the resolutions favored are:

- Development of uniform federal policies toward ports, speeding up the granting of federal permits for port projects, and coordination of federal, state and local regulations affecting ports;

- Development of federal water quality standards which reflect the needs and uses of ports, and development of environmental impact standards which take into account the limited jurisdiction and financial resources of ports and provide a better balance between environmental and economic factors;

- Continued federal tax exempt status of capital improvement bonds issued by ports;

- Creation of a national policy to ensure that port energy needs are given adequate priority in the event of energy fuel allocations;

- Reduction of the nearly 11 year time span between the Congressional authorization of a water resource project and its initial funding;

- Adequate funding by the federal government of port programs mandated to fulfill federal requirements pertaining to worker safety, environmental quality and shipping security; and

- Revision of laws and regulations presently causing delays to port dredging.

The AAPA delegation also passed a resolution opposing any further action by the U.S. government which dictates cargo loading priorities (such as a regulation in 1980 giving coal destined for domestic use priority over export coal).

● New officers

Edward S. Reed, executive director, Port of New Orleans, was elected chairman of the Board of Directors of the American Association of Port Authorities at the group's 70th annual meeting in Los Angeles today.

Melvin Shore, port director, Port of Sacramento, Calif., was elected Chairman-Elect of the Board; and Lloyd Anderson of Portland, Ore., and W. Gregory Halpin of Baltimore, were named First and Second Vice-Chairmen, respectively.

Cost-benefit of channel is 12.6-1

The cost-benefit ratio of 8.5 to 1 established by the Corps of Engineers when it initially studies the deepening of the Mississippi River Channel from 40 to 55 feet in 1976 did not closely consider the relatively new demand for the export of steam coal. A study made by the Peabody Coal Co., St. Louis, has added that factor and has produced a new ratio of 12.6 to 1 by the year 2000.

The Peabody study also predicts that the deeper channel would create an additional \$3.2 billion in coal export sales, a total of \$5.2 billion in annual economic benefits, and 62,000 jobs in the Mississippi River basin. The figures are based in an estimate of coal exports reaching 86 million tons annually by 2000. This may be a conservative figure, however, since the Port of New Orleans has estimated that coal exports through the lower Mississippi River could reach 120 million tons by 2000, which would increase the cost-benefit ratio to an even higher number.

The Peabody study noted that the deeper channel would mean that ports on the lower river would handle as much as 40% of the total U.S. coal exports by the end of the century. Without the dredging project, however, this figure would not exceed 20%, and this area would be relegated to handling overflow from East Coast ports, the report stated.

"At the channel's present 40-foot depth, the largest vessels which can fully load are limited to about 65,000 deadweight tons," said Robert H. Quenon, president and chief executive officer of Peabody. "If the channel depth is increased as proposed, large colliers of 100,000 tons or more could be fully loaded and navigate in the lower river channel."

"A 140,000-ton ship partially loaded in today's channel achieves a freight rate (to Europe) of about \$17 a ton," Quenon explained. "If it could be fully loaded, the rate would drop 40% to about \$10 a ton."

Until recently the U.S. has exported only insignificant amounts of steam or thermal coal. According to the study, exports in 1979 amounted to only 2.5 million tons, excluding shipments to Canada. In 1980, steam coal exports abroad grew to 16 million tons and, including Canada, topped 26 million tons. (Port of New Orleans figures for 1980, for example, show coal exports of more than 3.3 million short tons compared to 1.3 million tons for 1979, an increase of \$142%.)

World steam coal trade is expected to average an annual growth of at least 7% and perhaps as much as 11% for the next 20 years. Correlating the various estimates, Peabody believes that this trade will increase roughly fourfold from 1985-2000 or from around 110-140 million tons in 1985 to more than 450 million tons by 2000. In anticipation of the increasing demand for U.S. steam coal, the company has obtained options on two sites on the lower Mississippi River and is studying the feasibility of locating one or more coal transfer terminals there.

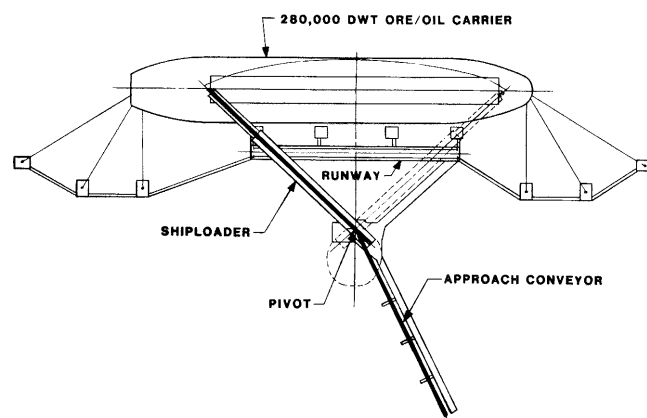
At the same time, the study pointed out, "our competitors are moving aggressively to advance their position in world trade," particularly Australia and South Africa.

In addition to a coal cargo value of \$3.2 billion (based on 1979 dollars) that would result from dredging the Mississippi River to 55 feet, the Peabody study estimated that the lower river ports would gain \$895 million in direct annual benefits by 2000 from the export of coal. The figure

includes the benefits to direct port services, to waterborne services required in obtaining coal, and to the services required in moving coal by water to export terminals. When indirect benefits are added to these direct benefits, the total resulting from the dredging project would increase from \$165 million in 1985 to \$1.4 billion in 2000, the report stated.

Giant linear shiploader ordered for Carajas project : Soros Associates (Associate Member, IAPH)

Companhia Vale do Rio Doce has contracted for a 16,000 ton per hour capacity linear shiploader to be erected in the Brazilian port of Itaquí near the city of São Luís. This giant machine, capable of loading 280,000 DWT ore carriers, is the latest in a series of Linear Loader installations engineered by Soros Associates, consulting engineers of New York.



The Itaquí Linear Loader is the last link in the transportation system now under construction for shipping iron ore from the Carajas mine in the heart of the Amazonian jungle, approximately 500 miles inland. The port site at Itaquí was pinpointed by Soros Associates in the course of an extensive site selection study and master planning completed in 1973.

The Linear Loader was selected by the owner in place of the previously designed loading system incorporating two quadrant-type slewing shiploaders. Switching to a single Linear Loader reduced the cost of the port installations by several million dollars without decreasing the yearly shiploading capacity of 35 million tons. These savings are due to reduction of the cost of the marine foundations and to simplification of the materials handling system.

The machine, weighing 2625 metric tons, will be the largest shiploader in the world. It will have a retractable loading boom with 45 meter outreach, supported on a movable bridge that rests on two turntables. One turntable will travel on a straight runway; the other will be further inshore and fixed, allowing the shiploader to pivot and slide over it.

Oakland to develop master plan for 8 Mexican ports

In one of the largest operations of its kind, the Port of Oakland has been given the job of developing a master plan for the training of Mexican personnel to administer and operate eight industrial ports being developed in the Republic of Mexico.

This was announced by Norvel Smith, President of the Oakland Board of Port Commissioners, at a press conference at the Port of Oakland.

Smith said that the Republic of Mexico had launched a very extensive port development program as part of national policy designed to more efficiently distribute population and industrial activity throughout the country.

"The size and scope of the project may be seen from the fact that the Mexican Government has provided an outlay of \$618 million for the program and plans to invest the huge sum of \$20 billion by the time the program is completed," he said.

The agreement to develop the training master plan was reached following year-long discussions between the Port of Oakland and Mexico's Office for Coordination of Development Projects.

Mexico has embarked on a policy designed to offset the historical concentration of industry in the metropolitan areas of Mexico City, Guadalajara and Monterey, which together contain about 40 percent of the nation's urban population.

This concentration of industry has led to pollution, high costs of land and public utilities and over-reliance on surface transport for imported raw materials and exported goods.

The comparative shortage of deepwater port facilities in Mexico is reflected in the volume of cargo passing through U.S. ports to and from the Mexican interior by overland routes, a total of about two million tons a year.

The Port development program and related efforts to decentralize Mexican industry are in anticipation of rapid growth in import-export traffic which is expected to reach 236 million tons a year in 1990.

The agreement calls for the Port of Oakland to immediately commence on-the-job training at one of the ports on Mexico's Pacific coast as a pilot program—the Port of Lazaro Cardenas.

At the same time, the Port will set up an office in Mexico City for the purpose of formulating the long-term master training program. The Port will conduct a survey of port training facilities throughout the world in order to provide the Mexican personnel with "early start" training in advance of the implementation of the master training program.

Smith said the Port of Oakland welcomed the opportunity to participate in the port development plans of the Republic of Mexico.

He said: "The Port of Oakland possesses the experience and expertise to provide the kind of training required for the Mexican development program.

"Sound management as well as technical skill propelled Oakland from an ordinary port to its present position as the largest container port on the U.S. West Coast in the short span of 15 years.

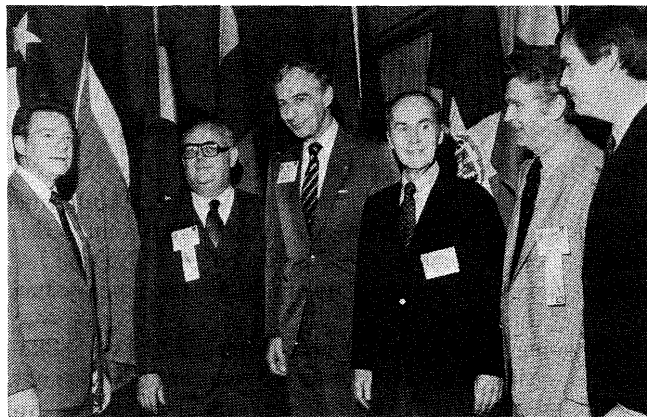
"Our reputation for moving ahead and for getting things done is now known in the far-flung corners of the world. In recent years we have been called upon and we have provided port management training for port personnel from five countries and these personnel have returned home to apply the knowledge gained here.

"Our present undertaking with the Mexican Government is the largest of its kind for the Port of Oakland and probably the largest of its kind in the United States.

"We hope our participation in this important and extensive port development program will help advance the economic goals of the Republic of Mexico and promote trade between our two countries."

The eight industrial ports being developed in Mexico are Altamira, Tamaulipas; Laguna del Ostion, Veracruz; Lazaro Cardenas, Michoacan; Salina Cruz, Oaxaca; Dos Bocas; Tobasco; Tuxpan, Veracruz; Ensenada, Baja California; and Topolobampo, Sinaloa.

New leaders for U.S. ports



Retiring chairman of the American Association of Port Authorities, Don Welch (left), executive director of the South Carolina State Ports Authority, congratulated his successor at the recent AAPA's 70th annual convention in Los Angeles. New Chief is Edward S. Reed, New Orleans executive port director; chairman elect is Melvin Shore, Sacramento port director; W. Gregory Halpin, administrator, Maryland Port Administration, was elected 2nd vice chairman and Lloyd Anderson, executive director of the Port of Portland, 1st vice chairman. Ron Brinson (right) is AAPA president. (This photograph by courtesy of the Marine Exchange of the San Francisco Bay Region).

Tacoma's new cool rooms in full operation



Port of Tacoma's new \$500,000 reefer cool rooms at Terminal 7, Berth A are now in full operation in time for 1981/1982 fruit season. This 12,000 sq. ft. fiberglass insulated facility adds 50,000 box (fruit) capacity to Tacoma's existing cool rooms at Pier 2 which are also

50,000 box capacity. A cool room temperature of 34°F (1.7°C) will be maintained for handling fruit, however, it is possible to vary temperatures to below freezing or raise temperatures above 34°F depending on the requirements of the cargo. The new facility has four truck unloading docks which will result in a fast, efficient operation for unloading cargo from delivering carriers.

For the past several years the fruit trade has grown tremendously; in 1979-80 Eight Million boxes of apples were shipped from Washington ports and it is anticipated that this trend will continue. With the addition of Tacoma's cool rooms at Terminal 7, Berth A, Tacoma is looking forward to dedicating the existing Pier 2 cool rooms to additional new business which fruit shippers have been most anxious for Tacoma to handle.

Cargo traffic in Antwerp during the first half year of 1981

From data provided by the Port of Antwerp Authorities it appears that in spite of the constant economic crisis, labour-intensive general cargo increased by 5.7% to 15.45 million tons in the port of Antwerp during the January-June period of this year.

Outgoing general cargo which increased to 11.1 million tons as against 9.6 million tons last year entirely accounts for this growth of the overall general cargo traffic.

At the basis of this growing outgoing traffic are the increasing exports of iron and steel products which rose by 8.1%; meaning that in the first half year 300,000 tons more of iron and steel were shipped from Antwerp than in the corresponding period of 1980.

Other important increases were noted for the traffic of

bagged fertilizers (+60%) which nearly amounted to one million tons, for the imports of fruit which increased up to 380,000 tons (+21%), for the exports of flour and sugar which doubled to exceed 760,000 tons and for the traffic of bagged cereals which amounted to 376,000 tons (+135%).

From partial data it results that container traffic in the port increased by more than 20,000 containers as compared to the results of the first six months of 1980.

Roll-on/Roll-off traffic slightly increased by 1.8% and amounted to 881,000 tons during this first half year.

On account of economical or political reasons, however, the imports of crude oil (-24%), ores (-15.5%) and fertilizers (-26%) dropped. Exports of oil products (-28%) also were below last year's level.

In all 24.9 million tons of bulk goods were handled in the port as against 28 million tons in 1980.

Due to this result overall traffic amounted to just over 40 million tons, which represents a decrease of 5.4% as against the first six months of 1980.

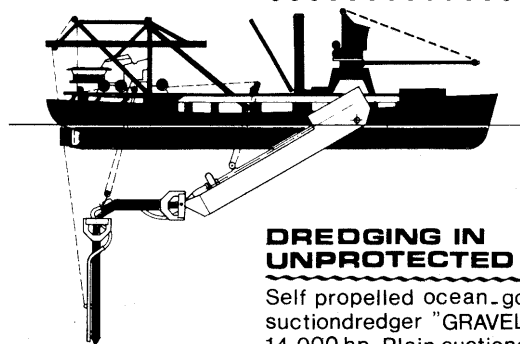
Full steam ahead for new Merseyside coal terminal: BTDB

The new coal shipping terminal at the BTDB Merseyside port of Garston became fully operational recently, when the second of its pair of purpose-built shiploaders entered service.

Developed over the last year and a half at a cost in excess of £1.25 million, the new facility came on steam on a single loader basis in early June, 1981.

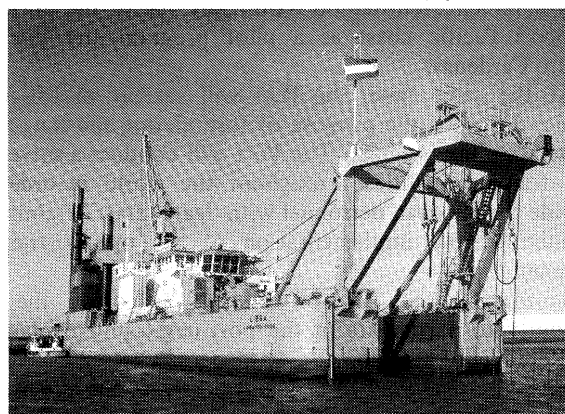
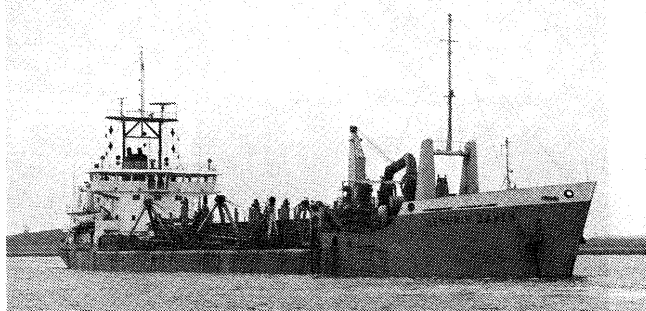
Operating at speed of 500 tonnes per hour and with two loaders in service, the terminal is capable of handling 1.25

DREDGING ANYTHING ANYWHERE ANYTIME



DREDGING IN UNPROTECTED WATERS

Self propelled ocean-going cutter/suction dredger "GRAVELINES"
14,000 hp Plain suction depth 60.00m



DREDGING IN HARD MATERIALS

"AQUARIUS" and "LIBRA"
Self propelled ocean-going rock cutter dredgers
Total 17,500hp installed Power on the cutter 3000 hp

PUMPING ASHORE

"HENDRIK ZANEN"
Trailing suction hopper dredger (5750 m³)



Zanen Verstoepe nv

Holland

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million tonnes annually, more than double Garston's previous coal handling capacity.

Coal shipped through Garston is from NCB collieries in Lancashire, Yorkshire, Nottinghamshire and the Midlands and is currently mainly destined for Ireland and the Isle of Man. But the port has recently handled an experimental shipment to the Channel Islands and is hopeful of picking up this and other new trades on a regular basis.

Commenting in Liverpool BTDB Docks Manager, Mr. Tony Winfield, said, "Now the new terminal is fully operational, Garston has the most modern and efficient domestic coal shipping facility anywhere in the UK. We have high hopes that our investment in this up-to-the-minute plant will help the NCB in their drive to capture new export markets for British coal."

Port of Rouen's trade is expanding for the fifth consecutive year

The Port of Rouen in 1980 saw intense activity. Put more specifically, a record trade of over 22 million tons was marked up. For the fifth consecutive year a growth in trade was achieved; annual tonnage grew steadily from 15.6 m. t. in 1976 to 16.9 m. in 1977, 18.3 m. in 1978, 20.6 m. in 1979 and finally 22.2 m. tons in 1980.

If we can look for the reason for such a continual growth in the middle of economic difficulties all round us at the present time, we could put it down, without any shadow of doubt, to the impressive foresight of the Port Authority's management. We are beginning to enjoy the full effect and benefits of the equipment and installations built up over recent years.

They are now working well and in full swing with the bulk as well as with the general cargo. But this progress is just as much, even more so, due to Rouen's geographic position which makes her the nearest seaport to the Paris catchment area, and more widely with good access to the richest French counties.

Year after year, Rouen has been blessed with a very great range of cargoes which, moreover, is almost equally balanced between imports and exports. This gives the port a robust health all-round, the fits and starts in the one or other direction always end up equalling out. In fact, as the Port of Rouen is largely specialised in certain directions now being developed (by far the most outstanding example of this is the exporting of agricultural foodstuffs that make up 2/3 of the Port's exports) each and every year with hardly any exception we manage to increase our tonnage. Without being too spectacular, this increase is regular, with an annual mark-up of from 7 to 8%. In 1980 Rouen kept to her usual by having a 7.7% increase, the best reached by French Port Authorities.

Keeping up this rate, it would seem that the Port of Rouen will finish up having round about 29 million tons by 1985, and this is what the «high-flying vision» contained in the VIIIth Plan. This target seems likely to be reached without, of course, full certainty of it being guaranteed.

In arriving at the 1980 total score, it would not be irrelevant to remember that the Port of Rouen enjoyed relatively peaceful labour relations last year, which is more than can be said of certain other great French ports. Apart from the lucky event of our Port's activities not being interrupted and thus not interfering with the smooth and continuous running, there is cause for congratulations for the reputation for effective running that the Port of Rouen

has achieved in the eyes of all in international maritime trading in the world.

Three major points stand out in the developing policy of the Port of Rouen Authority. The certain trump cards for the year just gone can be pinpointed as follows:

- For the Port of Rouen, 1980 has been the year of the «big ships», a development particularly vital for the coal trade;
- 1980 brought very marked confirmation of Rouen's abilities in specialising in agricultural foodstuffs; two-thirds of our exports were made up of products agricultural in origin, otherwise known as the famous «green petrol» which is so indispensable for the country's external trading.
- 1980 likewise confirmed the Port of Rouen as playing a very important role in general cargo, chiefly in its most modern form: containers. We nearly got to the 100,000th «box» this year.

Mr. Seefeld, president of the European Parliament Transport Commission guest of the Propeller Club Port of Rouen

The guest of honour of the Propeller Club Port of Rouen was recently Mr. Horst Seefeld, president of the European Parliament Transport Commission. On that occasion, numerous figures of the economic and political life of the region came to join the Club members, giving this particular meeting a special glamour. We will mention particularly. M. Bolotte, Préfet de Région, M. Nicolle, on behalf of M. Lecanuet, Mayor of the City, whose health prevented him from attending, M. de Rochebouët, the Port of Rouen President, and M. Mandray the Port's general manager.

M. Seefeld's address outlined the following: «The E.E.C. policy on transport». We were sure of a particularly interesting review on such a wide-ranging topic, because of this speaker's personality. As it turned out there was not very much to speak about on transport policy for the simple reason that transport policy within the E.E.C. has up to now been still in its infancy. M. Seefeld could only deplore the fact that European Parliament decisions in the majority of cases are never followed up. This is largely because the Council of the Ministers of Transport failed to take the action. One simple statistic pinpoints well the place given to transport in E.E.C. affairs, since transports has to be content with 0.06% of the Community budget, compared with 70% for agriculture.

Naturally talk revolved intensively around Europe's slow pace in this matter of transport, which is strange when transport's vital role in the economy is taken into account. Those taking part went away, however, without being pessimistic. M. Seefeld pointed out that the U.S.A., Italy and also Germany took a very long time to build themselves. He intimated that Europe would still need much more time. However, it is not to be denied that a real will for action exists among transport professionals.

For example, M. Mandray recalled that, for economy reasons, a working party no longer exists in the Community to thrash out problems concerning ports, but European Port managers have decided to continue meeting regularly. The President of the Institut de Droit International des Transports, which is based in Rouen, emphasised his organisation's activities at European level and he offered his

services to M. Seefeld.

The latter strongly urged them all to continue pressing and strongly encouraged his listeners to do whatever they can to stop transport being brushed aside in building up Europe.

Already 87% specialistic—trained functionaries: Bremen and Bremerhaven

Whilst the current technical changes in the modern terminals are followed by the public with great interest, the men who handle this new equipment are fully outside the limelight of this publicity. "There is clearly still serious information deficiency as far as the work of those in the port is concerned", determined the chairman of Germany's largest port operating company (BLG), Consul Gerhard Beier—in consort with the head of the union which represents the dockers, Holger Wohlleben.

The port worker is still seen by the public as he was in the structure long since past. With impressive figures, Beier and Wohlleben have demonstrated that, for the Bremen/Bremerhaven port group, reality has long since moved away from the image built up through the decades. For example, in 1960 still, the BLG—constantly to the fore in training matters—had simple port labour as 50% of all their employees. Today these form only 13 percent—the others are 'functionaries'; i.e., are trained crane-drivers, foremen, craftsmen, etc. Indeed, 46 percent of the port workers in Bremen and Bremerhaven are so-called multi-functionaries: employees who have completed several instruction courses, thereby attaining a respectively highly trained status.

As the first of the universal ports, Bremen in 1974 founded a port-labour technical school which meantime has turned out 475 trained port workers. Advantage has been taken by other employees in Bremen and Bremerhaven of the internal operations training possibilities offered by the BLG, which runs more than a dozen training courses. Moreover, the working hours over the last twenty years have been reduced from 43 1/4 hours in 1960, to 40 hours today whilst simultaneously annual holidays have increased from a maximum of 21—to 30 days.

Whereby over the last 20 years the wages of the port specialised worker has quintupled and sextupled and today lies within the upper-third in the specialised-worker category. Union-leader Wohlleben:—"If the Bremen/Bremerhaven port-group is establishing itself so excellently in a not-so-rosy economic situation, this will be due not least to the qualifications and cooperation-willingness on the part of the colleagues". Here the board-chairman of the port operating company BLG, Consul Beier, added: "There is no question but that the adaptability and flexibility of the employees in the ports have initially assisted in the success of the necessary technical structural changes".

Containers and suction cargo rise, oil and dry bulk drop: Port of Hamburg

31.6 million tonnes of every type of cargo were discharged and loaded in the Port of Hamburg in the first six months of 1981. Admittedly this was somewhat less than in the first half of 1980 and reflects general business conditions, but—particularly compared with much more negative trends in neighbouring ports—it can still be regarded as a satisfactory result.

It is clear from a glance at traffic directions that the

decline lay almost exclusively on the receiving side. The imports fell by 14.6 per cent to 20.6 million tonnes, while the exports rose by 23.6 per cent to reach 11 million tonnes.

Quantity losses had negative effects on handling volume in two sectors of bulk cargo traffic. Dry bulk cargo (coal, ore, potash) fell by 15.9 per cent to 6.2 million tonnes. As regards liquid cargoes (crude oil, petroleum products etc.), the handling rate was reduced by 14.1 per cent, falling to 8.3 million tonnes.

Transshipment of suction goods (grain, feedstuffs, oleaginous fruit) showed a counter-trend. Last year had produced excellent results, and in the first half of 1981 there was again a further increase—8.1 per cent to 7.3 million tonnes.

The positive development is also continuing in the handling of general and bagged cargo. Here the cargo volume rose by 6.4 per cent to 9.8 million tonnes. Exports alone scored a plus of 14.6 per cent to 5.5 million tonnes. Containers were again responsible for the growth: 15.5 per cent more than in 1980. 434,790 TEU totalling a weight of 3.9 million tonnes were loaded and discharged during the first six months of this year.

The Hamburg port economy evaluates in particular the rise in general cargo exports as a sign that the port has succeeded in reinforcing its market position. Clients in the interior realise that for them Hamburg is a reliable partner in dealing with their overseas business. (*Port of Hamburg Topics*)

Conventional wharves become multi-purpose terminals: Port of Hamburg

At the same speed in which the container share in the Port of Hamburg's general cargo handling is growing, the handling firms are ensuring technical and organisational adjustment of their facilities to new developments. The latest example is Terminal 84/85 at Rosshafen, where by transferring traffic areas and demolishing part of a quay shed, additional open air surfaces have been created for container traffic.

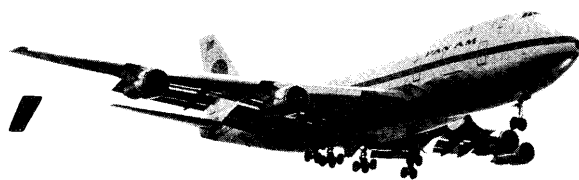
Initially a 40-tonne heavy duty crane with spreader is on hand to serve containerships, and another one will be added at the beginning of 1982. Stowing of the containers on land is carried out by an EDP-controlled transtainer. An interchange office at the terminal entrance offers a service otherwise only known from special terminals. At the packing station container handling is linked with the shipment of conventional goods; here the qualified specialist staff proves its worth.—The operating company is a working community of Rosskai GmbH., a company of the Buss Group, with the Hamburger Hafen- und Lagerhaus Akt.Ges.

In Hamburg the port economy is based on private enterprise. The handling firms compete with each other for ships and cargoes, and for this reason alone constantly have to endeavour to offer their clients, the shipping companies, precisely those facilities which are necessary to ensure speedy dispatch of the ships entering the port.

Changes in shipping inevitably bring in their trail a corresponding change in the transshipment facilities of sea-ports. In Hamburg this process has already been under way for a long time. The companies ensure that no halt

(Continued on page 46)

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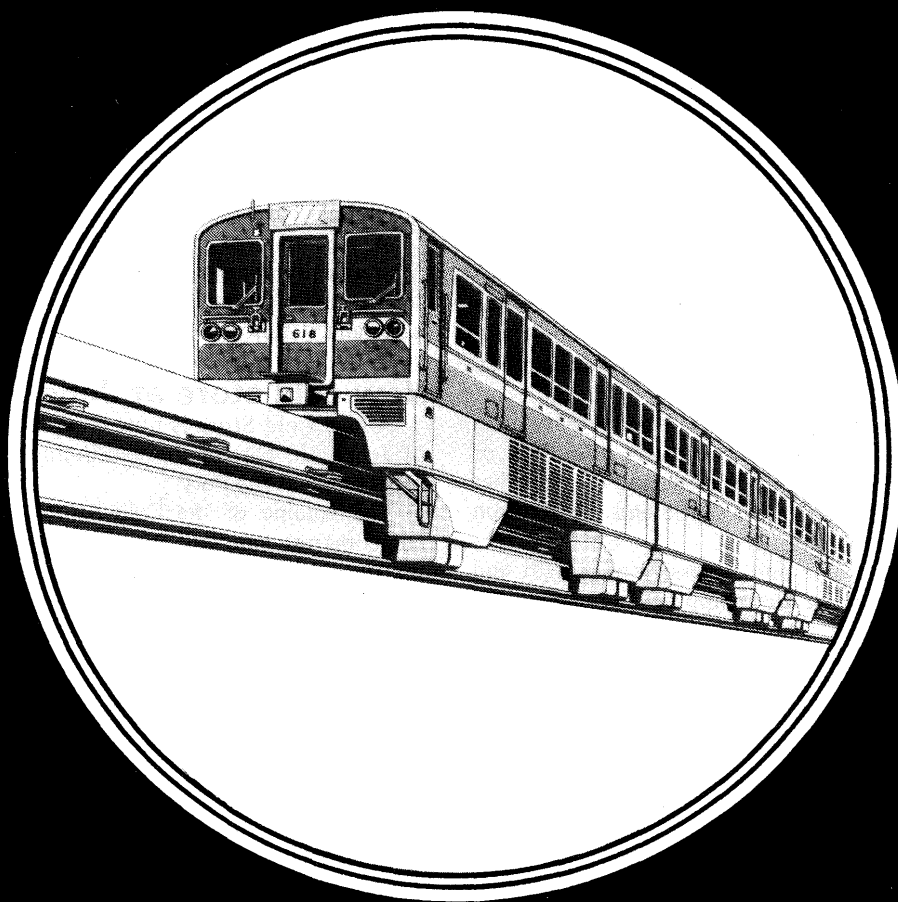


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(Continued from page 44)

occurs in this process and in every individual case "smooth" transition can be guaranteed.

An important part of this adjustment process is the adaptation of the quay facilities, originally conceived for the handling of conventional general and bagged cargo, to "multi-purpose terminals" which provide maximum facilities for ro-ro services and containerships.

This is effected—as at Terminal 84/85—by reducing the quay shed surfaces or wherever it is possible by widening the quay aprons, or by filling up harbour basins no longer required and acquiring additional land surfaces. (*Port of Hamburg Topics*)

Sisterport Ceremony Mombasa — Rotterdam

On the 6th of October 1981 in Mombasa, Kenya, a ceremony took place whereby the Kenya Ports Authority, representing the Port of Mombasa, and the City and Port of Rotterdam declared their mutual relationship as sisterports.

The protocol was signed and witnessed on behalf of KPA by the chairman Mr. L. Wamba and the Managing Director Mr. J. Mturi and on behalf of the Rotterdam delegation by the Acting Major dr. J. van der Ploeg and the General Manager of the Port of Rotterdam Mr. H. Molenaar.

Both ports have declared to cooperate more closely in matters of technical cooperation, port-management and administration, the exchange of information, training etc. The Rotterdam delegation presented KPA with so called Port of Rotterdam scholarships.

The event marked the first occasion of the twinning of two ports under the IAPH Sisterports Scheme.

500 take part in Gothenburg's floating harbour conference

Together with some 500 other guests, Sweden's Minister of Transport and Communications, Mr. Claes Elmstedt, recently took part in "Göteborgsk Hamndag 1981" (Gothenburg Harbour Day 1981). This conference was arranged on board the Stena-Sessan line's new jumbo-ferry, the "Kronprinsessan Victoria" employed in the Gothenburg-Frederikshavn run.

The theme of the conference was "Productivity in a modern harbour", and the sponsors were the Port of Gothenburg and the Gothenburg Stevedoring Co. together with shipowners Broströms, Transatlantic and the Johnson Line, and Atlantic Container Line.

Views on the great value and necessity of a tight and good co-operation between the shipping companies, the stevedoring company, the clients and other parts involved were given in papers delivered by M. Lars Baecklund, the Swedish Shipowners' Association, Mr. Per Bjurström, Gothenburg Stevedoring Co. and Mr. Erik Olsson, the Swedish Shippers' Council. In the debate following the speeches Mr. Sven Ullman, general manager of the Port of Gothenburg, acted as chairman. Many interesting details and ideas on how the effectiveness and productivity at a modern port could be increased were ventilated as well as how rising costs could be counter-checked, and the discussion circled of course mainly around the Port of Gothenburg with comparisons with other ports in Sweden and abroad.

At a press conference arranged on board the ferry, the Swedish Minister of Transport and Communications, Mr. Claes Elmstedt, said that the government was concerned about the diminishing of the Swedish merchant fleet

which has been going on for many years. The total tonnage now is about half of what it was at its peak in the 1970:s.

He said that during the autumn he had called representatives of the shipowners as well as of the on-board people's trade unions to a meeting at which the situation had been discussed. The minister had asked for proposals on how to strengthen the Swedish shipping industry's possibilities in the hardening international competition and he was now waiting for such proposals.

To a question if the government was willing to act in order to control the investment plans for Swedish ports in order to avoid an overcapacity situation, Mr. Elmstedt answered that such a control will not be established. As, however, several ports have launched plans to invest in connection with the awaited growing import of coal to Sweden, Mr. Elmstedt said that he hoped that the harbours and community authorities responsible for the investments hopefully planned should co-operate within the Swedish Harbour Association to avoid the anticipated overcapacity.

Broader main fairway to Port of Gothenburg

The main fairway leading to the entrance of the Port of Gothenburg is now being made broader and safer by blasting away four grounds at the sides of the passage.

The fairway has a minimum depth of 12 metres, but as the beam at some passages is relatively limited it has been decided to blast away some near-by grounds—especially as the traffic here is very heavy with about 25,000 ships passing per year.

The Swedish Riksdag (Parliament) has thus assigned 10 m. Sw. Kronor for the purpose. A reason which has contributed to the decision is the fact that quite a few groundings have occurred here in recent years.

A jack-up type drilling platform and a pontoon-based hydraulically operated excavator are now occupied with the job to make the main fairway to Gothenburg broader and safer and it is hoped that the job will be finished in February.

New cold store at Jebel Ali

A new Cold Store is now under construction at the Port of Jebel Ali, part of the continuing expansion of facilities programme at the Port.

The volume of the Cold Store rooms will be 42,000 cubic metres and will be able to accommodate approximately 9,300 pallets. Depending on the type of goods stored, this is equivalent to an average capacity of 7,000T.

The complex will consist of eight separate cold store rooms varying in size and in which the temperature can be separately controlled in the range of -29°C to 13°C. This allows for complete flexibility of use with various quantities of different products requiring specific storage temperatures.

Separate plant and administration building will be constructed adjacent to the cold store and completion of the whole facility is scheduled for Autumn 1982.

Vessel and cargo traffic remarkably continues to increase: Mina Jebel Ali

The Industrial Zone at Mina Jebel Ali has had an increase in the pace of its development. Several major companies have been looking at land, warehousing and/or berthing space. A lease was recently signed by Gulf Fleet for a site

on the East Wharf, to be occupied in the spring of 1982.

Leases with several other major companies for land at Jebel Ali are currently being finalised. The Port is fully operational with a complete infrastructure including roads, energy, water, telephone and telex facilities, plus all other services normally found in a modern industrial zone. Facilities catering for the marine side of industry are also fully in place and further planned developments include an oilfield supply centre and steel manufacturing and fabrication yard. The relocation of the Dubai-Abu Dhabi highway to skirt the Jebel Ali Industrial Zone is currently under progress and set for completion by January 1982.

Meanwhile vessel and cargo traffic at Jebel Ali Port continues to increase remarkably. During the first six months of 1981 the Port has shown an impressive climb in cargo handling figures breaking all previous records. More vessels have called in the first six months of 1981 than in twelve months of 1980. The container TEU throughput of 61,440 for the first and second quarters of 1981 is very close to the throughput (63,792 TEU's) for the whole of 1980. Showing an increase of 360%, cargo (excluding petroleum products) loaded in the first and second quarters of 1981 was 282,177 DWT compared to 61,367 DWT in the same period of 1980. Similarly, cargo landed increased by 68% and container TEU throughput by 89%.

To accommodate similar future increases, Mina Jebel Ali continually expands its facilities; at present under construction is a cold store situated on the quayside for easy and direct delivery to and from vessels, and two new warehouses totalling 22,000 sq. metres intended for use by the common user and set for completion by July 1982.

Australia's sea transport statistics

The amount of non-bulk cargo handled at Australian container and roll-on roll-off terminals fell in 1979-80 for the first time in 10 years.

The Federal Minister for Transport, Ralph Hunt, in releasing the second annual edition of sea transport statistics produced by the Department of Transport, said the percentage of total non-bulk cargo handled at terminals had also shown its first fall in the same period.

Between 1978-79 and 1979-80 total cargo handled by Australian waterside workers increased by 14pc to 67 million tonnes. The increase occurred mainly in bulk cargoes, bulk overseas cargo, having increased by 42pc to 32 million tonnes. This was largely due to a 97pc increase in the amount of bulk grain handled, to over 18 million tonnes.

Other significant differences between statistics for 1978-79 and 1979-80 were:

- the number of registered waterside workers decreased by 5pc to 8816 men, continuing the trend of the last 10 years.
- the number of men working under special agreement was, at 35pc of the total number of regular waterside workers, the highest ever recorded.
- average weekly earnings for waterside workers in permanent ports increased of 11pc to \$323.90, compared with the "all industries" average, which showed an increase of 9.5pc over the period to \$247.10.
- average weekly hours worked in permanent ports increased by 8pc to 27.8 hours per week.
- the number of working visits to ports by vessels stevedored by waterside workers decreased by 78 to 10 289.

Conventional vessels made 6pc fewer visits to Australia in 1979-80 (1610 to 1510), but on average handled 7pc more cargo at each visit.

- roll-on/roll-off visit decreased by 12pc from 212 to 186, although average tonnes per visit to Australia remained stable.
- between 1979-71 and 1979-80 the number of total vessel working visits to Australia has decreased by some 20pc.

PBA leads the Warana parade



The Port of Brisbane Authority's Warana parade float—it comprised the bows of three ships and a container crane. Members of the Nundah Marching Girls Association dressed in sailors' uniforms, were the "crew".

The Port of Brisbane Authority played a "leading" role in the city's annual Warana parade and festival this year (September 26, 1981).

The Authority sponsored the parade—and International Ports Day—under a general theme of: "Nautical—but nice".

In addition, the parade (of 150 floats) was led by the Authority's entry. Trophies for the best participants were donated by the P.B.A.

The parade theme and the Authority's involvement were seen as a means of making people more aware of the role played by ports in helping to maintain a nation's prosperity.

An estimated 300,000 people watched the day's festivities.

The floats were colourful and representative. There were replicas of dolphins, pirates, ships, fishermen, turtles, seagulls, sailors, barges—and even a submarine. Bands, clowns, bikini-clad girls, balloons, streamers, flag waving people and low flying Royal Australian Air Force planes all combined to create a spectacular, noisy and memorable spectacle.

The parade moved through the centre of the city where the salute was taken by the Governor (Sir James Ramsay).

On October 6, the Warana winners gathered at Parliament House where the Minister for Tourism, National Parks, Sports and the Arts (the Hon. J.A. Elliott) made the presentations.

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Best Community Service Unit	Mater Children's Hospital
Best Equestrian Unit	The Shetland Pony Owners and Breeders Society of Queensland
Best Musical Unit	The Royal Fiji Police Force Band
Best Pedestrian Unit	Malcolm Sue Kung Fu School
Best Historical Unit	Iron Maiden Steam Society
Best Ethnic Unit	Italian Community

Botany Bay Park takes shape: Ports of N.S.W.

When the Maritime Services Board began planning the Port Botany development in 1975, it determined that significant areas of the new reclamation would be set aside to be developed as open public space.

In fact, 10 per cent of the port reclamation was marked for this purpose to provide a buffer between existing residential areas and the new port; to compensate for changes to the former environment and to soften the otherwise purely functional port and cargo facilities in a way that would offer the public a worthwhile recreational parkland.

Landscaping is under way along major roadways within the port reclamation: the scenic roadway along the top of the main embankment on the seaward side of Port Botany, roadside landscaping is being completed by lessees of areas within the port reclamation (following the Board's master plan for disposition of suitable native shrubs and trees and specified grass plantings) and two large open space areas including the 28 hectare park with its string of ponds.

The alignment for the foreshore roadway was set well seaward of the original foreshore to allow for a broad area of open space.

The Board retained Bruce Mackenzie and Associates, a leading Sydney firm of consulting landscape architects, to prepare a design for the landscaping of the new area. The firm was previously engaged by the Board to form and landscape the Illoura Reserve at Peacock Point in Sydney Harbour.

The design of this parkland will provide

- places for families and other groups to picnic
- carparks and bushland paths
- seats in sunshine or shade from which to watch waterbirds, entertain children or simply enjoy the view
- spaces for family games of cricket or football
- paths and spaces to walk, jog and exercise
- cycle paths around and across the ponds
- ponds for paddling, sailing toy boats and discovering water creatures
- reedbeds and swamps to seek out waterbirds in their natural habitat.

The new 28 hectare park includes 22 ha of sand reclaimed during the Port Botany project by Leighton Candac, the Board's contractor for the Brotherson Dock

container berths.

The site is 2.5 km long and an average 200 metres wide. With the addition of the contiguous existing areas of Sir Joseph Banks Park, the nine-hole golf course at Banks-meadow Park and the former Esplanade Reserve, the area totals 46.3 ha (115 acres) within Botany Municipality—about three times the size of Hyde Park which occupies four large city blocks in the heart of Sydney.

The basis of design was a dune system along the line of the foreshore roadway such as might have resulted from exposure to severe southerly winds. However, the dune system created by the Board is somewhat larger than might have been formed by nature. This gives strong protection to the parkland, sheltering people and vegetation from the sweeping southerlies.

Four carparks will provide for more than 200 cars at a time without detracting from the bushland appearance.

Bold timber structures will provide observation decks at high points in the park to give panoramic views of the Bay and timber logs and poles will be used to build bridges into the park and across the billabongs as well as lining passages carved through the dunes.

A boardwalk elevated on piles just clear of the water in an area of paperbark and reedbed swampland at the quieter end of the park will offer ideal conditions to observe the birdlife which is already being attracted to the area—much of the vegetation now fringing the ponds has been donated by visiting waterbirds.

Contracts were let for the gathering of seeds from particular native trees and shrubs which grow in marine environments comparable to that of Botany Bay Park.

The Soil Conservation Service of NSW was engaged to plant spinifex and marram grasses on the seaward side of the large dune-like berm north of the roadway and the plantings are already stabilising that area.

The park development has historical associations with early uses of the adjoining area.

In 1844 Thomas Kellett, a baker and former soldier, constructed the Sir Joseph Banks Hotel at the seaward end of a 30 ha stretch of land which he purchased from the colonial government in 1834.

The building was erected in virgin bushland to attract coaches and riding parties of the gentry from Sydney Town.

The original hotel was extended and much enlarged by later proprietors and on Boxing Day 1851 it was reported that 5000 people (8 per cent of the population of Sydney at that time) attended the attractions in the spacious grounds of the hotel.

Until the Second World War the Sir Joseph Banks Park grounds remained popular for family and group picnics.

The Board believes that completion of the new Botany Bay Park will again draw visitors to enjoy leisure pursuits in this area—in a re-created natural environment.

Following completion of landscaping development, the Board plans to transfer the area to the Department of Lands which has already advised its willingness to accept. The department will probably then place the care, control and management of the park under the Botany Municipal Council which has been a party to planning and design from the outset of the Board's development project.



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