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Effective Intermodalism was written and devised by M.G. Graham M.A. FBIM FILDM.

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- Advice for Training Officers and Users on Case Studies, Role Play and Further Reading
- The Video
- What is Intermodalism
- The Intermodal Model
- The Economics of Intermodalism

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Ports Harbors

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For information contact: Keiji Imai, Director, Asia Pacific Region 213-2856/8



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IAPH ANNOUNCEMENTS AND NEWS

IMO Hails IAPH Survey on Dredged Material Disposal

Mr. W.A. O'Neil, IMO Secretary-General, has recently written to the IAPH Secretary General Mr. Kusaka concerning the survey on dredged material disposal which IAPH conducted among its member ports during 1989.

A 109-page report on the survey results was submitted to the IMO in February as an IAPH Information Note. The IMO Secretary-General in his letter of 6 March 1990 acknowledged the receipt of the IAPH report as follows.

"The collaboration of your Association in submitting very relevant data, which will assist us in the preparation of a good overview on the many activities related to the disposal at sea of dredged material, is most appreciated. I am grateful for your proposal to prepare a new issue of the survey report in the form of a note for presentation to the Office for the London Dumping Convention and would once again like to express my thanks and appreciation for the good cooperation which prevails between this Organization and your Association."

3 Members Leave IAPH Positions

Mr. N.G. Samuels, Port of Geelong, Australia

The news of Mr. Samuels' retirement from the Port was received at the IAPH Head Office in January 1990 in the form of an entry to the Membership Directory from the Port of Geelong. According to the updated list of the key officials, **Mr. P.G. Morgan** has taken over from Mr. Samuels as Chairman & Chief Executive.

Mr. J. Leech, Department of Harbours and Marine (Queensland), Australia

In his February 6 letter to Secretary General Kusaka, Mr. Leech advised that his service with the Queensland Department of Harbours and Marine was to terminate on February 9, 1990. He thus confirmed his resignation from the positions as Member of the Executive Committee, Member of the Board of Directors, and Vice Chairman of the Constitution and By-Laws Committee of IAPH.

Mr. Leech's letter contains the following words:

"I am happy to say that I have had a long and enjoyable association with IAPH, attending every Conference since the 1979 Conference sponsored by the Port of Le Havre, and several of the Mid-Term Committee Meetings. The information gained from Conferences and the associated port visits, together with the friendly associations developed with many other representatives from other parts of the world, have been very useful to me in the carrying out of my responsibilities here in Queensland.

"I trust that IAPH will continue to grow in strength and importance as ports throughout the world see the need to pull together towards the growth of world trade."

Mr. Francis J. MacNaughton, Port of Vancouver, Canada

In his March 7 letter to the Secretary General, Mr. MacNaughton says, "After 37 very active and interesting years in the port business, I have decided to take life a little easier. As a result, on March 31, 1990, I will be leaving my position as Port Manager and Chief Executive Officer of Vancouver Port Corporation. I will take some vacation and on July 1, 1990, will be assuming a consulting role with the Vancouver Port Corporation."

Thus Mr. MacNaughton has confirmed his resignation as a member of the Executive Committee of IAPH effective March 31, 1990. He concluded his letter with the words, "I have enjoyed my association with IAPH and wish the Association well in all future activities."

Secretary General Kusaka has written to the respective members expressing his deep appreciation for their contributions to the work of IAPH. The Secretary General confirms that as of March 30 there exist 3 vacancies in the 24-member Executive Committee.

IBERIA — official airline for the 17th IAPH Conference

A memorandum of understanding has been signed for the official carrier arrangement between IBERIA, Airlines Of Spain and IAPH to confirm the designation of the official airline for the 17th World Ports Conference of IAPH, which is scheduled for May 4-10, 1991 in Spain.

In the memorandum both parties agree to take concerted action to promote the 1991 IAPH Conference through publicity and advertising in the relevant IAPH publications throughout the period before the May 1991 Conference in Spain and to provide all those travelling to and from Spain to attend the IAPH Conference using IBERIA flights with the necessary information and the best possible conditions.

Prize Money for the "Akiyama Prize" Winner Increased

The CIPD Chairman and the Secretary General jointly announce that the top prize money to be awarded to the first prize winner in the IAPH essay contest will be increased from US\$750 to US\$1,000 at the forthcoming IAPH Conference in Spain in May 1991.

At each biennial Conference of IAPH, the top prize winner in the essay contest is to receive the "Akiyama Prize" which consists of a silver medal and the prize money on top of an invitation to the Conference, with air tickets and hotel accommodation provided by the Association. According to the IAPH Head Office, the increase

IPD Fund: Contribution Report – US\$14,000 still needed

The contributions from members to the Special Development Technical Assistant Fund (the "Special Fund") as of April 10, 1990 are listed in the box. The amount received in contributions in the past 22 months following the EXCO Abidjan meeting in April 1988, totals US\$56,351, leaving the amount of US\$13,649 yet to be raised. It is our earnest wish that all members should give their generous support towards achieving this goal.

Contributions to the Special Fund (As of April 10, 1990)

Contributors	Amount Paid:
Paid	(US\$)
Associated British Ports, UK	3,000
South Carolina State Ports Authority	y, USA 1,000
Cyprus Ports Authority, Cyprus	700
Japan Port & Harbor Association, Ja	apan 450
Toyo Construction Co., Ltd., Japan	234
Toa Corporation, Japan	500
Port Alberni Harbour Commission,	Canada 200
Korea Dredging Corporation, Korea	ı 300
Port Authority of New York &	
New Jersey, USA	1,000
Vancouver Port Corporation, Canad	a 1,000
Klang Port Authority, Malaysia	200
Saeki Kensetsu Kogyo Co., Ltd., Jap	ban 250
Penta-Ocean Construction Co., Ltd.,	Japan 1,000
All French Ports by UPACCIM*	1,560
Shimizu Construction Co., Ltd., Japa	an 390
Taisei Corporation, Japan	390
Japanese Shipowners' Association, Japanese	apan 390
Port of Redwood City, USA	100
Puerto Autonomo de Barcelona, Spa	in 991
Port Authority of Thailand	100
Port Rashid Authority, UAE	500
Japan Cargo Handling Mechanizatio	n
Association	390
Obayashi Corporation, Japan	400
Port of Copenhagen Authority, Den	mark 1,000
Clyde Port Authority, UK	1,000
Public Port Corporation II, Indonesi	a 150
Toyama Prefecture, Japan	420
Georgia Ports Authority, USA	1,000
Port of Oakland, USA	350
Kuantan Port Authority, Malaysia	200
Port of Seattle, USA	1,000

in the amount of the prize money was decided on the basis of an additional contribution Mr. Toru Akiyama recently made to the "Akiyama Fund", which was created as a special fund by the Association seven years ago with Mr. Akiyama's initial donation.

In accordance with the conditions for entry to the IAPH essay contest 1990/1991 as announced in the December 1989 issue of "Ports and Harbors", the closing date for receipt is 1st September 1990. For those who may need the details on how to apply for the contest, we reproduce once again the Conditions for Entry.

Kajima Corporation, Japan	420
Port of Reykjavik, Iceland	500
Canada Ports Corporation, Canada	250
Nigerian Ports Authority, Nigeria	250
Port of Montreal, Canada	1,000
Ports Public Authority, Kuwait	1,000
Tanzania Harbours Authority	200
Junta del Puerto de Gijon, Spain	500
Sharjah Ports Authority, U.A.E.	500
Port of Yokohama, Japan	4,950
Port of Long Beach, USA	1,000
Mauritius Marine Authority	200
Chiba Prefecture, Japan	403
Dr. Frederik K. DeVos, Canada	100
Tokvo Metropolitan Government, Jap	an 3.941
IAPH members in the Netherlands**	3,209
Mr. Robert W. Innes, Canada	250
Autorite Portuaire Nationale (APN), I	Haiti 100
Hiroshima Prefecture, Japan	666
City of Kobe, Japan	4,438
Port of Houston, USA	1,000
Port Authority of Fiji, Fiji	300
Osaka Port Terminal Development Co	orp.,
Japan	697
Port of Halifax, Canada	300
Nagoya Port Authority, Japan	3,033
Kawasaki City, Japan	1,444
Port of Nanaimo Canada	200
Nijgata Prefecture Japan	362
Maritime Services Board N S W Aus	stralia 390
Kobe Port Development Corp Japan	698
Solomon Islands Ports Autho Solomo	090 m
Islands	100
Gambia Ports Authority Gambia	100
7 Ports of New Zealand***	1 000
Cyprus Ports Authority, Cyprus ****	700
Daito Kogyo Co Ltd Japan	1 000
Port of Hakata, Japan	985
Total:	US\$ 56.351
Pledged: Nil	

* Union of Autonomous Ports & Industrial & Maritime Chamber of Commerce

** Directorate-General of Shipping & Maritime Affairs, Port Management of Rotterdam, Port of Vlissingen, Port of Delfzijl/Eemshaven, Port Management of Amsterdam

*** Ports of Auckland, Port of Napier, Northland Port Corporation, Southport (NZ), Port Taranaki, Port of Tauranga, Port of Wellington

**** Contribution made for the second time in this fund raising term

AWARD SCHEME IAPH ESSAY CONTEST 1990/1991

How could the efficiency of your port be improved? Your answer could win you the Akiyama Prize A silver medal and US\$1,000 in cash plus An invitation, including travelling costs and hotel accommodation to attend the 17th World Ports Conference of IAPH May 4 – 10, 1991 in Spain

IAPH invites entries for its 1990/1991 Award Scheme from those working at all levels in IAPH member organizations in developing countries.

Conditions for Entry to the IAPH Award Scheme 1990/1991

- 1. Suggestions regarding how the efficiency of your port (or ports in general) could be improved should be presented in English, French or Spanish, typewritten, and submitted to the Secretary General, the International Association of Ports and Harbors, Kotohira-Kaikan Building, 1-2-8 Toranomon, Minato-ku, Tokyo 105, Japan.
- 2. The suggestions may cover any aspect of the administration, planning or operations of ports, such as improving productivity or the utilization and maintenance of equipment and storage areas, reducing delays and damage to cargo, etc. An attempt should be made to quantify the benefits which would result from the suggested improvements together with the costs (if any) involved.
- 3. Entries may be made by individuals employed by IAPH member organizations, and should be the original work of the entrant. Those which are the result of official studies or otherwise sponsored projects will not be eligible.
 - 3.1 Entry texts should not exceed 20 pages excluding a reasonable number of appendices containing tables, graphs or drawings.
 - 3.2 The paper size must be A4 (21.0 x 29.7 cm)
 - 3.3. Three (3) copies of the entry paper should be submitted to the IAPH Head Office at the above address.

- 4. Entries will be judged by a panel of experts appointed by the Chairman of the Committee on International Port Development of IAPH. The panel will give greater merit to papers identifying and evaluating specific improvements than to entries covering a wide range of improvements in general terms.
- The First Prize for the winning entry will consist of:
 5.1 The Akiyama Prize (a silver medal plus US\$1,000 or the equivalent in local currency); and
 - 5.2 An invitation, including travelling costs and hotel accommodation, to attend the 17th Conference of IAPH, to be held from May 4 to 10, 1991, in Spain.
- 6. In addition to the First Prize, Second, Third and Fourth prizes of US\$500, US\$400, US\$300 will be awarded to the next best entries.
- 7. Additional prizes of US\$100 each will be awarded to any other entries judged by the panel to be of a sufficiently high standard.
- 8. A summary of winning entry may be eligible for publication in the "Ports and Harbors" magazine.
- 9. At the decision of the panel, a bursary may be awarded to any one prize winner (subject to agreement of the employer).
- 10. The closing date for receipt of entries is 1st September, 1990.

The Singapore party at the Port of Yokohama.

(Pictures by courtesy of the Port of Yokohama)

Mission leader Mr. Lam (left) and Mr. Kitamura, Director General, Port and Harbour Bureau, City of Yokohama.



On Thursday, March 8, 1990, a group of experts in national land planning, urban planning and port development of Singapore, visited the Head Office and was welcomed by the Secretary General and his staff. The party from Singapore was on study tour to Japan and Hong Kong. On the same morning, the 7-man group, headed by Mr. Lam Chuan Leong, Permanent Secretary, Ministry of Trade and Industry, Mr. Phua Kok Kim, Assistant Director (Research), visited the Bureau of Ports and Harbours, Ministry of Transport, where they met Mr. K. Mikanagi, Director General and discussed with him long-term port development policy directions in both countries. The group also visited the ports of Yokohama on the same afternoon and Kobe on the following day, to exchange views on long-term directions concerning port development towards the next century.

The group members were: Mr. Phua Kok Kim, Assistant Director (Research), Ministry of Trade and Industry, Mr. Lim Hng Kiang, Deputy Secretary, Ministry of National Development, Mr. John Keung, Assistant Chief Planning, Urban Redevelopment Authority, Mr. Lim Kian Wei, Assistant Director (Policy & Development, Mr. Loh Chee Kit, Executive Civil Engineer (Planning & Design) and Capt. Pong Hin Tat, Controller (Marine Operations), Port of Singapore Authority.



Membership Notes:

New Member

Temporary Member

Port Authority of the Cayman Islands (Cayman Islands) Address: P.O. Box 1358, Harbour Drive, Grand Cayman Tel: 809-949-2055 Fax: 809-949-5820 (Mr. Errol L. Bush, Director of Ports)

Changes

The Maritime Services Board of N.S.W. [Regular] (Australia)

Board Members of Sydney Ports Authority: Chairman: Mr. T. Blamey Mr. F. Hooke Directors: Mr. M. Davidson Mr. I. Knop Mr. S. Hetherington Mr. Murray Fox Mr. J. McMurtrie Managing Director of Sydney Ports Authority: Mr. Murray Fox Managing Director of Hunter Ports Authority: Mr. G.A. Connell Managing Director of Illawarra Ports Authority: Mr. M. Muston

VEB Seehafen Rostock [Regular]

(German Democratic Republic) Telex: 31371, 31264 Tel: 366 31130 Fax: 366 21932

The IAPH Directors from Ireland have been elected recently. They are: Mr. P.J. Keenan, General Manager, Cork Harbour Commissioners serving as Director, and Mr. M.J. Hoctor, General Manager, Limerick Harbour Commissioners as Alternate Director.

OPEN FORUM

Our Common Future

By Drs. Jan W. de Nie, Strategic Planner Department of Controller, Port of Rotterdam

A Paper by Port of Rotterdam Strategic Planner

The IAPH Head Office takes pleasure in publishing a paper written by Drs. Jan. W. de Nie, Strategic Planner, Port of Rotterdam, in this issue's "Open Forum" column.

According to the author, this article was written to give free rein to unbridled, private thoughts about the possible implications of the so-called "precautionary principle" and the principle of "sustainable development" as given in the Brundtland Report*, entitled "Our Common Future".

"Our Common Future" — the report of the World Commission on Environment and Development, headed by Gro Harlem Brundtland, Prime Minister of Norway, was set up as an independent body in 1983 by the United Nations in order to re-examine the critical environmental and development problems on the planet and to formulate realistic proposals to solve them, ensuring that human progress will be sustained through development without bankrupting the resources of future generations. (Published from Oxford University Press)

Introduction

This article is written as a funnel. It gives free rein to wide-ranging, private thoughts regarding the principle of sustainable development. Discussions that might be expected or are ongoing will be touched upon by statements to provoke thought.

Starting from economic growth it introduces the concept of sustainable development and ends with a direct application of this principle upon soil contamination. The impact of the principle of sustainable development upon economics, economic growth, energy and fiscal policy is explored, whereafter a direct application of the precautionary principle and sustainable development is given regarding soil (de)contamination.

Economic Growth and the Environment

Growth can be expressed and measured in many ways. In ports, industrial areas, the service industry and in gov-



Drs. Jan W. de Nie

ernment it means currently more production, higher throughput, more distribution activities, more added value, more governmental income, more civil servants. In short: it generally means "more", not "better". Economic growth is usually represented by an increase in the sum total of the value of goods and services produced in an area, e.g. the well-known Gross National Product.

Indirect ways to satisfy needs tend to increase the measured level of production of goods and services and therefore the Gross National Product. If one uses a car to travel 300 kilometers to enjoy nature, one adds to the GNP while traveling: after all, the car needs petrol. If enjoyment of nature can be found in the neighbourhood on foot, one hardly adds to the GNP. In the latter case satisfaction is acquired in a more efficient way, unless one enjoys driving, perhaps even in a traffic jam. It is seen then that the GNP measures efficiency, not quality of life. The GNP does not take into account environmental distruction. Therefor-. economic growth as measured by the Gross National Product statistic is not necessarily a measure for success: growth can go together with an undermining of the very foundation of a successful economy, i.e. the natural resource base. Work is being done to find a better statistic (1).

Environment and Sustainable Growth

The word "environment" is defined here to mean "functions granted by nature upon which life depends". Loss of function in the environment therefore threatens life in greater or lesser degree. And therefore ultimately the economy: there is no "economy" if there are no people.

Indefinitely sustained, material growth is a logical impossibility. After all, the planet Earth is finite, and as such material production and consumption is finite (2). As a consequence the expression "sustainable growth" needs to be changed into "sustainable development". The World Commission on Environment and Development, presided over by the former Norwegian Prime Minister, Mrs. Gro Harlem Brundtland, defined "sustainable development" in 1987 as "managing environmental resources to ensure both sustainable human progress and human survival" (3). The purpose of sustainable development is "to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs" (3). A more detailed definition is given, too. Sustainable development is defined then as "a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations" (3). An operational definition of sustainable growth is "sustainable use of resources" (4). Both the City Administration and the Port Administration of Rotterdam have accepted this principle.

Material growth has limits. But usefulness is defined by FUNCTION, not matter. Function is what is useful in view of needs. Therefore "material" growth can be maintained to some undefined extent, given an increase in function per unit of material input.

Cause and Effect: Growth versus the Environment

In philosophies on the relationship between economic growth as measured by GNP and the environmental problem four views stand out, which in their extremes can be simplified as follows:-

- 1. Economic growth creates a better environment.
- 2. Economic growth destroys the environment.
- 3. The creation of a better environment destroys economic growth.
- 4. The creation of a better environment creates economic growth.

None of the mentioned causal relationships are necessarily true. In the real world, time, technology, subjective considerations, incomprehension, powerplay politics and existing states of economic and environmental development play an important role. Any slogan (e.g. "environmental improvement through economic growth") is spurious since such a line omits constraints and assumptions that would make the slogan valid.

Economic growth can improve the environment if it is not accompanied by more pollution, and the fruits of this growth and new technology enable environmental improvements to be made. But planetary economic growth given current technology does not improve the environment: it suffices to see how current technology could influence the global environmental system given a car density equal to the U.S.A. in China and India. Therefore the slogan above may be true on a local system level.

If the economic substance cycle were a closed system and separated out from the natural substance cycle, or were balanced within the natural system, sustainable development would be ensured since natural cycles and manmade cycles would live either in apartheid or in peaceful coexistence. When viewing environmental statistics worldwide it becomes rather clear that peaceful coexistence has not been effectuated yet. If the 4th relationship above is changed into "Improving and maintaining natural resources ensure continuity in Man's survival", a statement is made that, given a long view, is the least untrue.

Sustainable Development: Now or Later?

The future does not exist in the real world. No one can point to the physical reality of the future: the principle of sustainable development is applied or not applied in the present. No one can prove that the future will solve what we don't solve today. And in view of reports about the greenhouse effect, depletion of the ozone layer, desertification, contamination of seas, soil, drinking water systems, surface waters, air, etc. (5) (6), the decision to apply the principle of sustainability has to be taken NOW, given whatever technology there is NOW. Future possibilities do not absolve the current generation from taking precautions. Application of the precautionary principle (such as discussed in the North Sea Conference, also this year in March, the Hague, The Netherlands), forces us to talk about reality and certainty, not "maybe" which could lead to inaction. The question remains, then as to what industry and ports can do now to help solve environmental problems and how and whether they can put sustainable development into practice now. Leaving it to the future means one loans from one's own future or one's children's without paying it back.

If industry does not take sufficient environmental care, the following might be applicable: as long as the reality of current environmental impact scenarios is insufficiently recognized, drastic government policies with harsh, largescale impacts are not to be expected – they are hard to sell to the electorate. If these scenarios become more certain, mostly by the effects of alarming negative findings, the electorate could welcome sacrifice of some immediate comforts to safeguard their children's future. This would make it possible to advocate drastic measures which then can have a large impact on the economy if introduced late, suddenly and disruptively, bringing with them quotas, heavy taxes on emissions, and no doubt more items on the black list of forbidden emissions and materials (7). Society should take precautions in order to prevent such a bill from being suddenly presented. Industry should therefore stay a step ahead.

Pollution and Energy Consumption

To given an idea of what type of discussions might develop based upon environmental concerns and the principle of sustainable development, this paragraph deals with energy pricing, fiscal policies and pollution control.

Energy generation, consumption and pollution are strongly correlated (8). Therefore the idea has come up to increase energy prices markedly (8). Energy prices would be based upon costs incurred as if energy were produced in a sustainable way. Levies would be raised on energy consumption and/or production in order to reach the minimum estimated cost level which would be concurrent with the sustainable production of energy. The revenue gathered this way by the State can be returned to industry and the consumer. Two scenarios can be envisaged:

1. energy prices for the final consumer will be increased, while the consumer will get it back in a different form (this way, macro-economically no changes in the tax burden will be caused); and/or

2. industry will be taxed this way (and the State will return the levies in a different form).

The above changes cost and revenue structures. But the balance of total income and costs to industry as well as the consumer will not change. A strong impulse to industry and the consumer will be exerted this way to lower energy consumption. This will decrease the level of polluting emissions and immissions. The process of change to sustainable energy production and consumption is thereby enhanced. The levies extracted from the tax payer will have to be reduced according to progress in the direction of sustainable energy generation and consumption. The danger that national governments will maintain the levies even when the purpose has been reached must not be underestimated. To help prevent this, the above scheme could be set into the form of a law. This would reduce uncertainty for industry and the consumer alike. This law should then lay down a route whereby regulatory price increases and the return of these proceeds to the taxpayer by changing the fiscal structure would be clear and certain: one of the main tasks of government is to reduce uncertainty for public and business alike.

Reactions of industrial and governmental management to such an idea as given above (as suggested in a publication of the Worldwatch Institute, see ref. 8) can be hostile. And in some countries it appears to be the case that "green" is left. There is even talk about emerging "eco-fascism". But in essence good environmental care and application of the principle of sustainable development is a non-political issue: it has merely to do with applying the precautionary principle and the intention that current and later generations fare well. The integration of this principle in the day-to-day affairs of business and in investment decisions is the real problem. And it is a problem of how sound environmental behaviour is rewarded, not punished by cost increases and lower margins.

To help solve problems of industrial transition into the direction of sustainability, furthering capital formation and investment is mandatory. To this end, the State could return more money to the energy industry than it levies from it, in order to help industrial transition. Perhaps capital destruction cannot entirely be avoided, but better contribution margins should help to compensate for this. There would be less compensation then to households, and therefore the real disposable income of households would come down. But regarding energy, a strong impulse for energy saving can help to compensate for this, e.g. by lessening waste. This would need a strong public awareness and internalization program.

Some may regard a scheme such as given above as a means to lessen the risk of sudden disruptive government measures. Such a scheme is based upon the precautionary principle. It is an insurance policy for business to lessen the risk of disruptive public policies. It helps prevent the risk of a sudden handing over of the the sustainability bill to society. It can keep the oil business longer in the oil business. Some may abhor such ideas. But such discussions might be expected now and in the future. Since this article merely wants to provoke thought, it is left to the reader to decide what he thinks of such a scheme.

Present Value and Sustainability

In business, people are accustomed to computing costs and outlays in terms of the time value of money. There is a problem connected with this. The problem is that discounting techniques were originally developed for pure financial transactions ("How much are you willing to pay me now if I promise to pay you 1,000 dollars two years from now?"). These techniques tend to discount values of long range costs and revenues to nought. If applied to environmental proceeds and outlays they literally put the value of the indefinitely long survival of mankind at zero. Application of these discounted value techniques for priority setting when considering alternative investments reward short term benefits. These techniques favour short term cash and profits, not long term environmental survival. Long term negative environmental effects are discounted to nought even while perhaps extremely costly or even impossible to remedy 50 years from now.

The use of negative interests rates to remedy the problem of the nullification of long term benefits and costs should be mentioned. But this is not compatible with business economics. When combining ecological and economic considerations it is suggested here not to use the discounted value technique at all. But a correction for inflation or deflation is necessary. Perhaps macro-economically it would be best to use negative interest rates and discount factors greater than 1 when considering projects that enhance sustainability. At least negative figures will carry a heavier weight when more distant in the future: to solve problems now becomes "cheap". But which business or government would like to compute this way? Which electorate gives the distant future more import than the shorter term? These are rhetorical questions.

Examples of Past "Hidden" Costs

Examples of how business computations appear to neglect later environmental outlays are not hard to find. And given prevailing discounting techniques, later environmental outlays might not have played a role in taking the decision, even if taken into account. In the March 1989 issue of Ports and Harbors, Mr. McJunkin, President of IAPH, states "Several ports in this country are finding that it is virtually impossible to redevelop prime port properties because of past uses that have contaminated the soil to the extent that clean-up is economically impossible". Regarding the problem of air pollution in Long Beach, Mr. McJunkin mentions an outlay of billions of dollars needed to modify ships and installing shore power systems to enable ships to turn off their engines when alongside the dock. He warns against short-sighted investment decisions, in particular concerning the underground storage of petroleum products or storing ores on unpaved ground: "Your or the next generation will live to regret it".

Mr. H. Molenaar, Managing Director of the Rotterdam Port Administration, made public an estimate of the current costs involved if the soil in the Port of Rotterdam were to be cleaned by removing the contaminated soil and storing it elsewhere. He estimated this to be around 8 billion guilders (around 4 billion US dollars). These potential costs by far exceed the current book value of the Rotterdam Port Administration's assets. This is an indication of a potential bill: it does not mean that doing the above would be necessary or justified.

The Netherlands Environmental Policy Plan estimates the current Dutch environment bill that is passed on to the current Dutch generation to be ranging from 125 to 180 billion guilders (roughly 62.5 to 90 billion US dollars). The current generation could pass this on to the next generation while adding to it. An interesting item in this plan is the following: if stiff pollution standards are adhered to, even then 80% of the trees in the Netherlands will be dead or diseased in the year 2000. That is ten years from now (6).

Goals of Ports

Good cashflow and high asset market values further investment capacity and enable port authorities to expand given innovative ideas, thereby creating employment at a safe level and environmental quality that is acceptable to politicians, health authorities and the electorate.

A general goal while doing the above can be expressed as "furthering the level of business activity" (9). This goal can be broken down into subgoals. These subgoals can be expressed in terms of furthering innovation, sound industrial relations, employment, cost/performance of the port and quality of life. Quality of life encompasses items such as safety, environmental quality, employment level in the area and leisure time facilities. Sufficient quality levels define the attractiveness of the port and industrial area. The goals above put permanent dynamics into the port authority. They are generic and applicable to any port and industrial area. Given these goals, objectives and targets should be defined such that reaching targets means that one is reaching objectives within the direction set by goals. Liquidity is seen as a constraint: a lack of liquidity may lead to bankruptcy and discontinuity. It is assumed that target items of port authorities are at least:

- 1. cash flow (ability to pay one's bills)
- 2. asset value (expansion helps to increase or maintain value)
- 3. expansion (innovation and value added activities further this)

The problem is then to find how sustainable development would impact cashflow, asset values and expansion.

Contribution Margins

If, given the example of raising energy prices through fiscal means, volumes of energy products go down, contribution margins (revenue minus costs excluding fixed costs) should go up. This will help to soften the blow or even prevent it. The State can do this, as said earlier, by returning to the private taxpayer less money than levied on private energy consumption and more to industry. Informative internalization programs can help the consumer and industry to cut waste. This will help to maintain standards of living as expressed in the satisfaction of needs. This will decrease pollution levels: there is a strong correlation between energy consumption and pollution. Sustainability will thereby be enhanced.

Higher contribution margins on energy products and on handling then will help to form the capital needed to offset capital destruction and will facilitate divestment and investment. Some might prefer to the above a scenario where "pure market forces" will do the job. They might strongly protest at such an interventionist scheme, since "free market forces" would be deemed to handle the problem of energy pricing better. Others might feel that market mechanisms will do the job, but perhaps late, suddenly and disruptively. Why risk this if it can be avoided? It is merely a matter of applying the precautionary principle, and of staying ahead in order to soften the transition to a scenario where sustainability is a primary prerequisite.

The above does not mean that the Port of Rotterdam favours a policy whereby government regulations force energy prices to increase. It does mean, however, that government policies on the national and international level need to take into account the whole logistical chain when taking environmentally precautionary action: governments should not forget that better contribution margins along the chain are vitally needed if policy, using the energy examples, is to force the volume of energy products down.

Asset Values and Expansion

Asset values can be influenced by regulatory government standards. Norms on groundwater quality and maxima on soil contamination are criteria which can make sites become expensive.

Even worse: the asset values of sites could become negative, given obligatory decontamination. Particularly when land use has to change, there is a risk of loss of asset value: e.g. land fit for industry but not fit for housing, not fit for agriculture or livestock, nor fit for recreational purposes because of contamination resulting in poor growth of trees and shrubs. When the current lessee halts operations on that site, lacking other industrial applicants for the site, a loss can result because of lost flexibility in land use. Losses may occur when government standards are tightened or introduced, or when land use needs to change. Such costs may be a major burden in the 21st century. This would depend on the industrial development scenarios. Uncertainty in this respect is large and outlays for decontamination can be huge.

But risks do not necessarily realize themselves into actual damage. That is what insurance companies cash in on. The problem is to minimize risks for lessor and lessee alike, to further expansion, maintain or increase rental income and therefore to restore the functions of land when needed.

Changing Use of Land

A strategic risk for industry and the landowner alike (given contractual obligations) is the loss of function that land provides: the lessee or the landowner or both would have to pay for it, depending on contractual obligations and the legal system.

A landowner may find himself in the following situation: part of the contracts stipulate that when the lessee terminates operations on the site, the lessee will have to return the site to its original condition. This means that any clean-up costs are to be paid by him. Regarding other sites it may be uncertain who is to pay for decontamination, given prior lessees, the applicable legal system and the lease contract stipulations.

In the proposed scheme, lessees obliged to return the land to its original condition when terminating the contract will not do so. They will participate in a mutual insurance scheme, however, that pays the decontamination costs of sites — which can be necessary in case where the land use needs to change when a contract expires and is not renewed. This way the costs are spread out over time and the landowner and lessees lessen the maximum negative financial effect. Such a scheme needs to be supported by, in principle, all lessees. Perhaps the national government could be part of the insurance scheme.

This way a trade-off is created for the lessee who has to pay the decontamination costs. That lessee pays a fee every year, thereby increasing the cost but put limiting the risk of paying the full costs of decontamination later.

The lessee who thinks he might not have to pay decontamination costs would be less than enthusiastic, perhaps, to participate in such a scheme. Yet, if the yearly sum to be paid to the mutual insurance fund were relatively low, he might still be in for it: spreading out costs in time means that compounded interest can do its work. And laws may change such that lessees who are sure they would not have to pay decontamination costs will be in for a surprise. This would depend on the evolution of the legal system regarding contamination, the electorate and politics. The lessor runs the risk that some companies will not or cannot pay for the decontamination (e.g. lack of evidence, bankruptcy) when the contract expires and is not renewed, and might be in for the scheme: if the lessor pays a fee every year his risks are insured too.

Changing Leasehold Contracts

If sustainable development is accepted, a means to implement it may consist of a change in leasehold contracts. The structure of tariffs and leasehold contracts can in theory enhance sustainability. These matters can be studied within IAPH. A mutual insurance scheme could be part of such a change. Such an insurance fund would have the tendency to keep out extremist views on cleaning soil: cleaning soil for the sake of having clean soil (what IS "clean soil"?) serves no purpose. If risks are insured and thereby a saving scheme is set up to pay for decontamination needed if land use changes, sustainable development with regard to the use of land is ensured. The aim of such a fund would not be to spend it on cleaning soil: it is not a saving scheme for soil decontamination. The interest of all concerned, lessor and lessees, could be aligned this way to optimize land use such that decontamination were unnecessary. This would buy time for cheaper and better technology to clean the soil. And governments should provide incentives to intensify and speed up research in soil contamination.

The mutual insurance scheme could be set up for a limited amount of time: e.g. after 30 years (or more) it could be dissolved. Moneys would be returned then to those who subscribed to the insurance policy and were still subscribing at the moment of dissolution. In the meantime a different scheme could be set up if needed and wanted. Or the same scheme could be continued if its merits in the light of the then current situation warranted it.

Costs of Insurance

Lease contracts tend to run for decennia, not years. Therefore a relatively small, yearly insurance fee might suffice to cover decontamination risks. But decontamination costs can be very high per cubic meter of soil. It is suggested here that every participant would pay a portion to be agreed of the estimated cost of decontamination (fully restored) given his site condition and his type of activity. The fund could be administered by existing insurance companies, who themselves are not part of the insurance scheme.

It goes without saying that an idea such as the one given above has alternative ways of implementation. Such a scheme could be at cross purposes with respect to national decontamination grants and schemes. And the problem of ground water contamination might overshadow such a scheme: decontamination might have to be carried out in view of public health standards anyway, thereby restoring alternative uses of land as well. Let it suffice here that thoughts about a review of leasehold contracts and a mutual insurance scheme to implement sustainable development and the precautionary principle regarding the recovery of functions of sites and areas are given here to provoke thought.

Concluding Remarks

This article has given free rein to wide-ranging, private thoughts about the possible implications of the so-called "precautionary principle" (see e.g. the North Sea Conference and its declaration of March 1990, the Hague) and the principle of "sustainable development" as given in the Brundtland report, entitled "Our Common Future". Statements concerning the implementation of sustainable development have been made without evaluating them as to whether they are realistic or unrealistic. The article merely illustrates some reasoning that might result from the adoption of sustainable development as a leading principle by governments, business and economists. Sustainable development regarding the reception facilities for slops, the treatment of such, spoil disposal, the problem of chemical waste, air pollution, etc. have not been touched upon. Such matters are well in hand, given IAPH's subcommittees. The mutual insurance scheme suggested in this article is based upon both the precautionary principle and sustainable development. It would not be a scheme to finance the decontamination of soil, but would provide the safeguard that the money would be available in later times to clean the soil if an unavoidable change in land use warranted this. Hopefully the article has provoked thought in the mind of the reader.

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Final Declaration of the Third International Conference on the Protection of the North Sea

The Ministers responsible for the protection of the North Sea¹⁾ environment and the rivers entering the North Sea of the Governments of:

the Kingdom of Belgium

the Kingdom of Denmark

the Federal Republic of Germany

the French Republic

the Kingdom of the Netherlands

the Kingdom of Norway

the Kingdom of Sweden

the Swiss Confederation

the United Kingdom of Great Britain and Northern Ireland and

the Member of the Commission of the European Communities

responsible for environmental protection

participated in the Third International Conference on the Protection of the North Sea in the Hague on 7 and 8 March 1990.

Observers from the following states also attended the Conference:

Czechoslovakia, Finland, the German Democratic Republic, Iceland, Ireland, Italy, Portugal and Spain, as well as representatives from the following International Organizations and Conventions:

the Paris and Oslo Commissions,

the Bonn Agreement,

the International Maritime Organization,

the International Commission for the Protection of the Rhine,

the Memorandum of Understanding on Port State Control,

the Helsinki Commission,

the Barcelona Convention,

the International Council for the Exploration of the Sea,

the Trilateral Co-operation on the Protection of the Wadden Sea,

the Bonn Convention and the Committee on the Environment, Public Health and Consumer Protection of the European Parliament.

PREAMBLE

Participants remain individually and jointly fully committed towards the protection of the North Sea environment and agree that there is a need for continuous action, including action at the political level, to ensure that such protection is indeed effected.

The main tasks of this Third International Conference on the Protection of the North Sea have been to assess whether the targets and the time frames set with respect to the policies and measures adopted at the Second Conference will be met, and to decide, on the basis of this assessment and new developments, which further initiatives needed to be taken.

The political work regarding the protection of the North Sea environment has taken place within what has

become an effective international framework. The first step towards the establishment of this framework was taken by the Federal Republic of Germany in 1984. It convened the First International Conference on the Protection of the North Sea. The decisions taken on that occasion were elaborated at the Second International Conference, organized by the United Kingdom in 1987. The commitments entered into at both these Conferences still fully apply and have now also been endorsed by Switzerland.

In order to provide continuity for the ongoing work regarding the protection of the North Sea environment, officials will meet as regularly as necessary during the forthcoming years.

The participants:

- welcome the growing interest in their work of non-littoral states and of governmental and non-governmental organizations and in particular appreciate the participation of Switzerland and the presence as observers of the German Democratic Republic and Czechoslovakia;

- take note of the recommendations made to the Conference and underline the importance of being informed by many governmental and non-governmental organizations about their knowledge and viewpoints relevant to the further protection of the North Sea environment;

- recognize the need to broaden and intensify co-operation between states in the region from which riverine and atmospheric emissions find their way into the North Sea;

— invite states sharing the catchment area of major rivers entering the North Sea to establish mechanisms for the joint management of their waters, taking as an example the instruments developed for the river Rhine; and

- recognize that individual states in implementing the policies agreed at North Sea Conferences encounter specific problems related to their own national situation and accordingly develop national policies for reaching the common goals established. The participants considered the progress made in

the protection of the North Sea environment. They:
 welcome the progress made in implementing the decisions taken at the previous Conferences as reported in the report on the Implementation of the Ministerial Declaration of the Second International Conference on the protection of the North Sea and the 1990 Interim Report on the Quality Status of the North Sea; and

- welcome the initiatives of the Wadden Sea states towards the protection of this area of vital importance for the North Sea.

The participants adopted the following premises as a basis for their future work. They:

- will improve at the national level, and where appropriate at the international level, the control

and enforcement of regulations to reduce emissions which directly or indirectly affect the North Sea environment;

— will continue to apply the precautionary principle, that is to take action to avoid potentially damaging impacts of substances that are persistent, toxic and liable to bioaccumulate even where there is no scientific evidence to prove a causal link between emissions and effects;

accept the implications of the concepts of sustained use and sustainable development, and the integrated ecosystem approach, as indicated by the World Commission on Environment and Development; and

 take as a basis for further action towards the reduction of pollution in the North Sea:

 to further development and use of non- and low-waste processes and environmentally non-hazardous products;

- an integrated approach towards the environmental management of anthropogenic sources of land-based pollution from rivers, estuaries and the atmosphere, both by effective co-operation between the various authorities responsible and by developing comprehensive policies which take into account both emissions to air and to water;

- co-operation with industry, to continue to reduce polluting emissions at source by using the Best Available Technology ²⁾;

- the further reduction, as far as possible, of the risk of accidents which may harm the North Sea environment, and the continued improvement of response systems and procedures in case an accident does occur; and

- continued combination of the advantages of approaches based on both environmental quality objectives and emission standards.

1) For the purposes of this Declaration the North Sea comprises the body of water:

- a) southwards of latitude 62° N, and eastwards of longitude 5° W at the northwest side
- b) northwards of latitude 57°44.8' N from the northernmost point of Denmark to the coast of Sweden, and
- c) eastwards of longitude 5° W and northwards of latitude $48^{\circ}30'$ N, at the south side.

2) Throughout this Declaration, the term 'best available technology' is understood to take into account economic availability.

Innovation And Human Factors In A Global Environment

(Reprinted from Via Port of New York-New Jersey)

By Philip D. Kaltenbacher Chairman The Port Authority of New York and New Jersey

The choices we make as a society in terms of reinvestment and modernization of our transportation system will determine the nation's future economic competitiveness in a globalized economy, and the prosperity and quality of life of our citizenry.

We hear an awful lot about the dual deficits in the federal budget and our trade accounts, but there is a third deficit that gets less attention, yet may be even more ominous for our long-term economic well-being. I am referring to the serious deficit in the capacity of our national infrastructure — especially the transportation infrastructure.

In relation to the aggressive programs of infrastructure investment undertaken by our economic competitors in Europe and Asia, it is astounding to weigh the magnitude of their commitment against the relative paucity of ours.

In a very real sense, aligning transportation policy to the fast-changing realities of the transportation industry will be a test of our innovative skills. The process of economic globalization heightens the urgency with which we embrace new institutions and approaches.

In particular, two significant new conditions must be addressed: first is the advent of the metropolitan region as the definitive category for identifying a major economic area. Three-fourths of all Americans now live in metropolitan regions, and the bulk of commercial activity is focused here.

As regional economic centers have evolved and grown, they have generated different needs and concerns. Southern California has a highway system scaled to handle today's large trucks, but offers limited transit options for moving people. The New York-New Jersey region, on the other hand, enjoys an extensive, though aging, transit network, but its highways are laced by several prewar vintage connections that are not designed to meet today's freight-movement requirements.

In each case, the outcome may be similar — enormous congestion resulting in higher costs, eroded competitiveness, and a deteriorated quality of life. But the underlying causes are very different from one another and thus require different solutions. So it is very important that federal policies and funding mechanisms are given more flexibility to account for the diverse needs that have emerged in the various metropolitan regions around the country.

The second immensely significant change is the rise of intermodalism in the transportation industry -a result of both globalization and deregulation. Today's carriers no longer define their operations by any single mode - be it truck, rail, air or ship. And today's customers demand the optimal mix of shipping and travel modes to maximize speed, convenience, reliability and price.

While these new conditions have revolutionized the way people and goods are moved, our governing and policy-making structures remain essentially fixed along discrete modal lines. The U.S. Department of Transportation's vertical chains-of-command need to be recast to create a more interactive framework reflecting an increasingly integrated industry. The "system approach" Secretary Skinner has adopted for DOT's policy review process is a valuable step in the right direction.

The logical next step will be to generate strategies that capture the advantages of modal integration. One dramatic example we are dealing with at the Port Authority concerns the issue of landside airport access. The difficulties of getting people and goods in and out of the nation's airports is among the most serious limiting factors in aviation. It is an intermodal problem, and we, in turn, are looking to intermodal solutions — one of them being the creation of park-and-fly satellite transit hubs throughout the region's suburbs to service the airports.

I cite the Port Authority's experience because we have a track record of dealing with issues of both regionalism and modal integration. As a bistate agency, we are familiar with the intricacies of balancing diverse local interests and political constituencies with those of the broader needs of the region and its future. In partnership with our sister transportation agencies in New Jersey and New York, we recently initiated the Bistate Transportation Forum, which is a mechanism for ongoing collective planning whose objective is to develop a comprehensive agenda of transportation improvements for the entire metropolitan region.

High on the regional agenda will be the utilization of technological breakthroughs to help break down the institutional and jurisdictional barriers that so often seem to frustrate our best efforts and ideas. One such initiative is the development of a regionwide unitary ticketing system using magnetic strip credit cards to pay fares and tolls on any transit system or transportation facility throughout the New Jersey-New York metropolitan region.

Can it work? Just ask a Parisian how well the Carte Orange works to simulate transit use and link separate systems together. But looking first at the realm of intermodalism, as developers and operators of airports, seaports, freight terminals, interstate bridges and tunnels, but stations and a 14-mile-long commuter rail transit system, each day at the Port Authority is spent working out the problems and seeking to maximize the opportunities of connecting multiple modes of transport.

Over the course of almost seven decades of Port Authority history, a focus on innovation has been a fundamental pursuit. In conjunction with our private sector partners, the Port Authority has been instrumental in the development and application of new technologies, for example, the design of container-shipping facilities, computerized cargo processing, and the commercial application of vertical-takeoff/ landing, or VTOL, aircraft.

The Port Authority applies the same entrepreneurial spirit to its range of trade and economic development programs and services, such as the introduction of the World Trade Center concept as a clustered facility for international commerce. Our twin towers have spawned 71 offspring worldwide, all working together through the World Trade Centers Association to promote global trade.

In addition to the movement of goods and people, the Port Authority in the past decade has ventured into the field of information movement with the development of our Teleport - a satellite communications and data receiving facility linked to a regionwide fiber optics network.

In every line of Port Authority activity, we look to leverage our assets so each is supporting all the rest. For instance, the Port Authority is at the forefront in bringing resource recovery technology into the region to help solve our severe garbage disposal crisis. At the same time, the ash from our Essex County, NJ, plant now nearing completion will be tested for potential re-use in bituminous concrete pavement.

In these and other enterprises, our experience has given us a keen appreciation of how difficult it can be to innovate successfully. But our experience has also shown that with a commitment to experimentation and an openness to change, an organization learns how to manage the risks, learns to extract value and knowledge from endeavors that go awry, and learns to develop flexible alternatives that can respond rapidly to the customer's needs in unstable market conditions.

These qualities will be essential in the years ahead if we hope to deal effectively with the infrastructure deficit noted earlier. When you look at the enormity of the task, it's readily apparent that innovative approaches and technologies will be the key to filling the gap in capacity.

Simply building our way out no longer represents a viable option, particularly in the populous, heavily developed metropolitan centers where the needs are most pressing. The issues of cost, density, community resistance, environmental quality, and implementation delays demand that we look beyond the bricks-and-mortar approach to generate the capacity our transportation system will need to maintain a competitive economy and livable environment.

Innovative new technologies will enable us to generate soft capacity, that is, new capacity without a lot of concrete, but rather with investment that substitutes in a dramatically cost-effective way for the expensive, traditional strategy of facilities expansion.

Let me cite a small sampling of the kind of potential we envision: In this region, 16 agencies have launched a joint enterprise called Transcom, a central clearinghouse of real-time information for incident management, traffic conditions and construction scheduling. This centralized communications helps multiple jurisdictions coordinate complex efforts. But beyond those benefits to the transportation system's operators, cellular phone technology will also allow the user to access the same information, in essence giving the commuter and trucker more mobility just by picking up the phone.

Automatic vehicle identification, which is now being tested at the Lincoln Tunnel and several bridges in our region, uses a reliable radio signal to speed vehicles through toll barriers, at the same time keeping computer-accurate accounts for convenient billing by mail collecting a rich data-base of enormous value to system managers and planners.

The bar-code/scanner devices familiar to everyone from their supermarket check-out counters have transportation applications for identifying and locating anything on the move from shipping containers to an air-passenger's luggage.

Mention should also be made of weigh-in-motion machinery which will help keep trucks rolling, while promising a much more reliable means to scan trailer weights and deter costly, damaging, and dangerous overweight shipments from traveling our roads and bridges.

In aviation, microwave landing systems allow for shorter approaches, which is significantly for controlling aircraft noise while enabling airports to maintain full capacity even in less than ideal weather.

Finally, in the spirit of less-is-more, among the best ways to stretch our limited aviation capacity is to get short-haul traffic off the runways with downtown-(Continued on Page 18)

International Maritime Information **VYGRID PORT' NEVYS**

WHAT IS Europe 1992?

By M.J. Landman Director International Relations Rotterdam Chamber of Commerce

The 12-nation European Community (EC) has committed itself to an ambitious program to create a single EC market of 325 million consumers by the end of 1992. While tariffs among the original six EC countries were eliminated in the early 1960s, non-tariff barriers and other commercial impediments have prevented the EC from being a true "common market."

The EC was set up as an economic union, but in fact only the stage of a customs union has been reached where member states grant each other a zero tariff for customs duties and agricultural levies and have adopted one uniform tariff towards third countries.

Value Added Tax (VAT) and excise duties are internal revenues without impact on foreign trade since both are levied on imports and on domestic production which bring foreign traders and domestic producers in an equal position.

Despite attempts over the years by the EC commission in Brussels to eliminate differing national standards, expensive and time-consuming customs formalities, insulated capital markets, restrictive government procurement practices, barriers to services, and other restrictions, the EC member countries maintained separate national markets.

Thirty years after starting, the EC is still a "non-common market," where the costs for customs formalities on cross-border trade absorb 25% of the profits, where the automobile and telecommunications industries lose billions of ECUs (European Currency Units, approximately US\$1.16) by inefficient production standards, where small and medium sized industries have



Mr. M.J. Landman

less chances due to administrative costs and inefficient regulations, where consumers are still confronted with customs borders and large price differences in services from one member state to another, where national governments collectively pay 21.5 billion ECUs per annum more than necessary due to protectionistic procurement procedures. An ancient gridlock of problems still had to be solved.

Now, with the determined efforts of EC Chairman Jacques Delors and others—in particular former Commissioner Lord Cockfield—the EC is embarked on a revitalized program finally to complete what has been started in 1958: a "single internal market" with freedom of movement for goods, people, capital and services." The result is an annual increase in the Nineties.

Creating a European economy based on a single market will help to reduce or to remove all these unnecessary heavy costs and encumbrances. It will finally permit economies of scale and should thus allow European firms to be more dynamic and competitive. A single market of 325 million consumers will revive all sectors of the European economy. It will also reverse the trend of the decade during which growth in demand, production and trade has fallen far behind that of the U.S.A. and Japan and will allow the European economy to compete much more effectively with these economic blocks.

The costs of a "non-Europe" to consumers and industry alike are enormous. The EC loses at least US\$250 billion annually as a result of the internal non-tariff barriers. Apart from such direct costs, there are the billions of dollars wasted in developing different versions of products to meet a hodgepodge of national standards.

For example, US\$10 billion are invested in developing Europe's 7 different telephone switching systems. This compares with US\$3 billion in the U.S.A. and US\$1.5 billion in Japan to develop comparable systems in their single markets.

Scheduled for completion on December 31, 1992, the EC's Single Internal Market program involves the adoption of 285 directives that will establish new rules covering a broad range of business activities and products. This program will significantly change the competitive conditions affecting foreign companies selling in Europe for the following reasons:

First, by achieving a true common market this will result in greater production and trading efficiencies triggering new economic growth in Europe which in turn will increase demand for foreign products. A study by the EC Commission predicts that the removal of internal barriers may result in an increase over time of \$260 billion of demand for goods and services in the EC. This would be a 5.3 percent increase in the GNP of the EC, through more economies of scale and greater economic efficiency.

Second, competition in the EC should get tougher, as companies in the EC countries take a Europe-wide approach to marketing, and as mergers and acquisitions reduce the number of competitors but increase the size and strength of the remaining companies.

Third, harmonizing business regulations and eliminating national nontariff barriers will lower operating costs and will increase internal EC trade. This should be a positive factor for many foreign exporters and foreign affiliates producing in the EC. Greater production and marketing efficiencies should result.

Int'l Seminar on Environmental Aspects Of Dredging

(Nantes, 27 Nov. to 1 Dec. 1989)

(Reproduced from the IMO document: LDC/SG 13/6)

Introduction

1. The International Seminar on the Environmental Aspects of Dredging was held in Nantes, France, from 27 November to 1 December 1989. The Seminar was hosted by the French Ministries of Environment and the Sea with co-sponsorship by the Oslo Commission, IMO, IOC, ICES, UNEP and the International Association of of Ports and Harbours (IAPH). 200 participants from fifteen countries (mainly European and North American) attended the seminar.

Objectives

2. At the commencement of the Seminar the Chairman, Mr. R.G. Boelens (Ireland), presented a series of questions and possible assumptions for the seminar to address. The questions presented were as follows:

.1 What criteria should be used to signify harmful effects?

.2 What are the data requirements for evaluating dredging and disposal activities and how should the data be obtained?

(Continued from Page 16)

to-downtown service by using the VTOL technology mentioned earlier or with high-speed rail.

We also need to be more creative in the way we use our existing assets. For example, in this region serious planning has begun to convert underutilized and abandoned rail corridors into dedicated transit and freightways for buses and trucks. And the improvements in speed and stability on ferries foretell a return to the use of our inland waterways as multilane super-highways without potholes.

Each of these examples and dozens more must be tested and proven in terms of the costs of development and application; in terms of standardizing equipment and procedures — not just among carriers and between modes, but also across jurisdictional boundaries; and most importantly, each must be proven in terms of its market demand and responsiveness to customer needs.

Four key points must be observed as we develop new policies to foster innovation to meet tomorrow's transportation need:

First, Federal policy must nurture transportation innovation by initiating, implementing and funding major new research and, where necessary, by promoting and coordi-

.3 What are the possibilities for harmful effects and how significant are these effects?

.4 What are the environmental costs and benefits of alternatives?

.5 What are the relative risks between dredging and dumping?

.6 What can be done to reduce contamination of sediments?

3. The following possible assumptions were presented by the Chairman: .1 dredging is acceptable and so-

cially beneficial;

.2 some alterations to the environment due to dredging and disposal of dredged material are acceptable; .3 alterations are acceptable if they are short-term, or if they are confined to the dredging site or disposal site, of if they do not cause harm; and .4 procedures can be developed to measure the predicted effects in the

Conclusions and Recommendations

field.

4. The seminar agreed with the above-mentioned assumptions presented by the Chairman and agreed to the following conclusions and recommendations:

.1 the management of dredging requires a multi-disciplinary approach particularly with respect to the examination of dredging and disposal alternatives;

.2 dredging is considered a necessary commercial activity but does cause environmental impacts which do require control;

.3 improper disposal of contaminated materials carries the possibility of acute or chronic toxic effects and potential contamination of human food sources;

.4 improper disposal of uncontaminated dredged material can also cause major physical impacts and careful dumpsite selection is required to reduce resource-use conflicts;

.5 the use of dispersive sites, even for uncontaminated sediments, has noticeable environmental consequences;

.6 procedures for evaluating dredging activities do exist, but field verification of predicted effects and data interpretation need to be refined;

.7 sediment quality criteria are under development in many parts of the world but may be unsuitable for regional or international application due to the heterogeneous nature of sediments;

.8 regional or global disposal standards may be possible where there is clear scientific evidence of harm to marine life, human health or interference with other legitimate uses of the sea; regional or global standards may not be possible where there is no clear scientific evidence of harm and the determination of environmental protection is much more dependent on social and economic considerations (i.e. precautionary

nating standardization of new technology.

Second, policies, programs and strategies all must be "customer-driven" and these strategies must be flexible enough to respond to fast-changing conditions and the uncertain shape of the future.

Third, new institutional structures must be able to work effectively across jurisdictional lines in a metropolitan regional context, as well as across modal lines.

Fourth, all the technological capability in the world will not buy us a thimbleful of mobility if we do not have the human capability to manage it, operate it or use it. The human factor in innovation is an aspect that does not receive enough attention.

Of course, there is a need for greater emphasis on training and education so we have the know-how to manage and operate these leading-edge systems. But it also means greater sensitivity to the work environment and the personal needs of those who are operating this often highly automated equipment. And lastly, it means making these innovations easier to use for the customer, who at every turn is barraged by a hailstorm of confusing new technological break-throughs.

The user, or to put it less technically, the public, - and that's all of us - must be enlisted as constituents and

approach);

.9 modelling can be extremely helpful in predicting environmental impacts and in designing monitoring programmes to verify the predicted impacts; and

.10 contaminated dredged material needs to be addressed through pollution control at the source and not merely through the use of environmentally acceptable disposal options.

Summary

5. The LDC and Oslo Commission guidelines on dredging were considered to be adequate. However, several areas were considered worthy of further investigation including:

.1 the role of sediment quality objectives;

.2 the role of modelling in developing an environmental impact hypothesis;

.3 the development of new procedures to measure predicted effects in the field; and

.4 the identification of sensitive areas for special protection.

6. The Scientific Group on Dumping is invited to take note that most of these issues have been highlighted in the future work programme of the LDC Scientific Group on Dumping and 1992 has been targeted for examining beneficial and alternative disposal of dredged material.

Review of Developments In Standardization of Containers and Related Activities

Report by the UNCTAD Secretariat

(UNCTAD document: TD/B/C.4/329)

Summary and Conclusions

1. Although non-ISO standards containers have existed since the beginning of containerization, and although some of these continue to circulate worldwide while others move only in selected trades, standardization of equipment, especially of the dimensions and ratings of containers, has been a major element in the development of multimodal transport. The essential parameters of the present ISO 668 standard have not changed since its introduction in 1964, and this has provided favourable conditions for a remarkable growth of containerization and maltimodal transport expansion. The use of containers with relatively few different sizes and fixed dimensions has allowed the construction and economic use of expensive equipment, such as fully cellular container ships, transtainers, dedicated container trains and road vehicles, with the confidence that such investments would be subject only to the uncertainties of international trade and not to the proliferation of different container sizes.

2. The censuses of the world container fleet carried out periodically by an industry magazine have given a fairly distinct picture concerning the distribution of the container population by dimensional parameters, cladding material, ownership and other features. In the present report, the evolution of the container population has been analvsed on the basis of the censuses made since 1978. The main conclusion of this analysis is that a high degree of homogenity of the world dry cargo container population has been achieved and that this has increased from one census to another. The wide voluntary acceptance of the ISO 668 standard reflects the fair balance between the differing technical, safety, operational and economic requirements of marine, rail and road transport interests which was achieved in its elaboration and adoption.

3. The evolution of shippers' requirements and the changes in regulations restricting the dimensions of transport means, together with technical progress and the use by transport operators of economies of scale, have, however, introduced containers with dimensions going beyond present ISO standards.

The newly introduced non-ISO dimension containers are currently used primarily on specific trade routes although their area of circulation appears to be spreading.

4. However, the majority of countries

advocates for the investments that will be needed to meet the mobility challenge of America's future.

It is indeed sobering to scan the world and take the measure of our competitors' efforts — initiatives that include:

• A \$125-billion program for high-speed intercity rail service throughout western Europe – timed pertecity for the economic integration under the auspices of the EC;

• In Paris, the unification of all the city's transit systems - physically and operationally - including new linkages among the city's various rail terminals;

• London, having moved ahead on the successful redevelopment of its docklands linked to the city by a seven-mile light-rail line, recently unveiled plants for \$3.4 billion network of deep tunnels to further interconnect transit;

• Hong Kong's \$600 million Eastern Harbor tunnel, financed by the private sector, which will provide highway and transit linkages between East Kowloon and Hong Kong Island.

• And in Japan, a multitrillion dollar infrastructure investment program called the "Yonzenso" is nothing less than the biggest public facilities improvement effort in history. It features bullet trains upgraded to 180mile-an-hour speeds, and a jetport on a man-made island in the waters off Osaka. The out-islands are being tied to Honshu with breathtaking new multi-modal tunnel-and-bridge networks.

As these improvements come on line, higher rates of productivity already realized by those industrialized societies which have invested most heavily in their infrastructure will continue to accelerate past those who decide that they cannot afford it.

You will hear it said, "Go slow," because the economy has turned into a down cycle; and you will hear others temporize, perhaps out of political expediency; and you will hear from those who would allow the excessive negativism of the "not in my backyard syndrome" or the thirst for instant gratification of the here-and-now culture to cloud our long-term vision and constrict our long-range horizons.

But when you assess the developments occurring throughout this world with its swiftly integrating economy, the message is persuasive; it is absolutely imperative that we commit America to these innovative efforts to modernize and upgrade our transportation infrastructure if we want ours to be a productive and competitive society and if we want Americans to enjoy prosperity and an enhanced quality of life in the next century. cannot at present handle these new (larger) sizes of containers. Experience has proved that the movement of high-cube and oversized containers by inland transport systems in Europe, in most cases, is considered as "exceptional transport" with all the commercial consequences connected therewith (conditions, tariffs, etc.). In many developing countries their transport is often impossible. Furthermore, current container handling equipment is based on existing ISO standards, and the new sizes of containers cannot automatically be handled by existing equipment.

5. Because of operational and economic constraints in both developed and developing countries, and taking into account their modest share of the world container population, it would seem premature to incorporate these new (larger) containers in the ISO standards.

6. The Committee on Shipping may wish to request the UNCTAD secretariat to undertake a comprehensive study of the new-generation containers, taking into account the interests of all concerned parties. Such a study should include an economic, social and environmental analysis and an evaluation of possible costs or benefits which might result from their introduction.

7. Monitoring the development of the situation in respect of new additions to the world container fleet and trends in this area is important. Data on the distribution of containers entering the industry in respect of their dimensional characteristics permits the evaluation of the rate of proliferation of each dimensional category of containers and may be used to solve the question of the desirability of introducing changes in existing container standards. In this respect, sample surveys similar to that conducted by the UNCTAD secretariat would be useful in providing the industry with an indication of the rate of introduction of containers with different dimensional parameters and trends in this area. It would, however, be helpful if the container manufacturing industry were more responsive to such surveys. The Committee may wish to request such sample surveys to be carried out by UNCTAD from time to time or at regular intervals.

8. In view of a resolution adopted by TC 104 at its last plenary session requesting of "the Economic and Social Council and its subordinate bodies such as the regional economic commissions, UNCTAD and all other relevent non-governmental organizations, a full and world-wide economic evaluation for the requirements of future containers," the Committee on Shipping may wish to request the secretariat to take part in further studies in consultation with all interested parties so that the position of developing countries can be taken properly into account in the solution of this problem.

Developments in Multimodal Transport

Report by the UNCTAD Secretariat

(UNCTAD document: TD/B/C.4/328)

Summary and Conclusions

1. Technological developments in the field of transport-related data processing are progressing at a very rapid pace in developed countries, leaving many developing countries behind. The same is true in the field of international physical distribution, where multimodal transport operators (MTOs) from developed countries are expanding their services in terms of both services offered and technology employed.

2. Unless concerted action is taken by the developing countries themselves, the improvements they have made over the last two decades in the development of their own transport companies may be irrevocably lost and the majority of such companies may be relegated to the status of short-haul sub-contractors. Developing countries should take the earliest possible action to implement appropriate measures, relating in particular to:

(1) Acquiring the necessary expertise and technology to utilize modern electronic data interchange (EDI) within their transport industries;

(2) Modifying existing regulations to take these latest developments into consideration so as to facilitate the introduction of new technologies; and,

(3) Creating sufficiently large transport organizations that will have the capabilities for operating competitive physical distribution logistics services.

3. Such action should not be of a restrictive or protective nature impeding the use of these technological developments, since this in many cases will not benefit national economics. It should instead provide an opportunity to acquire the latest transport concepts and technologies, coupled with a broadening of expertise, particularly in the management of transport companies.

4. The development or rather the transformation of freight forwarders into MTOs and their joining forces with other transport-related companies would seem to open the possibility of indigenous transport organizers attaining a size which will allow them to play a greater role in the transport of goods from and to developing countries.

5. The elaboration of a standard form and model provisions for multimodal transport (MT) documents based on the Hague Rules and the Hague-Visby Rules is progressing in close co-operation with the competent commercial parties. A new set of uniform rules for MT documents has been drafted jointly with the ICC and various commercial organizations associated with it. It is the intention to submit the draft rules to the Committee for its information. Once agreed to by the various national bodies of the ICC, the new rules will be published as "ICC/UNCTAD Uniform Rules for a Multimodal Transport Document," replacing the current ICC Uniform Rules for a Combined Transport Document. Subsequently, a standard form of MT document will be prepared in compliance with Committee resolution 60 (XII).

6. The reference library for multimodal container tariff rules, established at the request of the Committee Shipping, has not met with the response expected, and it is suggested that the library be terminated.

ILO Training Programme For Latin America

In 1986 the ILO initiated a TCDC (Technical Co-operation between Developing Countries) programme for the Latin and Central America regions on port training. This programme promotes the preparation of standardised courses by port training centres based on a methodology developed by ILO's Inter-American Vocational Training Research and Documentation Centre (CINTERFOR) together with national vocational training centres in Latin and Central America countries.

According to this methodology, measurable learning objectives for course preparations are determined, taking into account the job to be performed by a course participant. During the course the progress of the participants is checked against the learning objectives.

Since 1986 directors and instructors of port training centres from 15 countries in the Latin and Central American regions have participated in two subregional and four regional workshops under this programme. After first identifying the different occupations where standardised training courses should be prepared, the actual preparation was done by different port training centres. The draft courses were evaluated by the workshops. The ILO has assisted the centres in this process.

So far the following courses have been prepared:

- 1. Induction course for port workers entering into the industry.
- 2. Basic course for port workers' training.
- 3. Course for port workers.
- 4. Course for port supervisors (conventional cargo-handling).
- 5. Course for supervisors/container terminals.
- 6. Course for supervisors on safety and hygiene.
- 7. Course for warehouse supervisors.
- 8. Course for operators of mobile cranes.
- 9. Course for operators of fork trucks.
- 10. Course for crane operators.
- 11. Course for operators of straddle carriers.
- 12. Course for operators of gantry cranes.
- 13. Course for tally-men.

All the courses have been distributed free of charge to all the port training centres in the regions. In addition, CINTERFOR has also prepared guidelines on course development to be used by port training centres. The guidelines were distributed to the centres in 1989.

During 1990 draft basic courses will be prepared by port training centres in Costa Rica and Peru on preventive maintenance of cargo-handling equipment and on hydraulics. Consultancy services will also be provided by the ILO. The ILO will assist in the final editing of the 13 courses already prepared, as well as making available supporting audio visual aids. Furthermore, in April CINTERFOR will distribute its guide on how to prepare occupational analyses in the port industry. Finally, the preparation of analyses, for competencies required in tasks to be performed in a container terminal, a multi-purpose terminal and a grain terminal will be started by port training centres in Mexico, Colombia and Argentina. The next regional workshop is planned to be held in November 1990. It will consider the draft analyses and agree on other courses to be prepared.

The results achieved so far by this programme of Technical Co-operation between Developing Countries in the field of port training have been very positive and have fulfilled a clearly identified need. It also shows that the ILO's expertise in vocational training in general is of direct relevance to the port industry. In this industry there is a continuous need for the training of the workforce by methods already used by other capital intensive industries.

ICS to Conduct Survey Of Reception Facilities

The International chamber of Shipping (ICS) has announced that it is to conduct a new survey on the availability and adequacy of reception facilities for the disposal of oil and chemical wastes and garbage from ships.

The Secretary General of ICS, Mr. Chris Horrocks, explained:

"Under the MARPOL Convention, States are required to provide reception facilities 'adequate to meet the needs of the ships using them without causing undue delay.' While some states have accepted that obligation, others quite frankly have not.

"ICS has conducted two previous worldwide surveys of reception facilities for oil residues as well as a more limited review of facilities in the Mediterranean for oil, chemicals and garbage. The oil pollution regulations of MARPOL, Annex I, have now been in force for nearly seven years, but we still frequently receive reports of non-existent facilities, particularly in certain oil loading countries. Ships have a right to expect a means of disposing of their residues in port, but far too many governments simply do nothing to remedy this situation."

Questionnaires have been issued to shipping companies worldwide so that ships can report first-hand experience of reception facilities, both bad and good. The IMO Marine Environment Protection Committee has been informed of the survey, and it is hoped to submit the findings to IMO in the Autumn.

7th VTS Symposium In Vancouver in June '92

The Seventh International Symposium on Vessel Traffic Services (VTS) will be held in the conference facilities of the HYATT REGENCY HOTEL in VANCOUVER, CANADA, from 8 to 12 June, 1992.

The International Organizing Committee met in Vancouver on 13 and 14 February, 1990, and approved the following themes proposed by Canada:

Symposium Theme: "Vessel Traffic Services in the Global Environment"

Keynote Address: "Forces on a Global Level Will Shape the Future of VTS"

Session Themes:

1. "Global Trends in Shipping and Ship Operations"

2. "The Mariner-VTS Operating Environment"—Developments in training, communication and co-operation in the ship-shore interface 3. "International

3. International

Co-operation"-Developments in international operating agreements systems and procedures

4. "VTS and Environmental Protection"—VTS effectiveness, public concerns, legal considerations, environmental sensitivity and planning for a clean environment

5. "The Global Expansion of VTS"—Future trends in VTS to expand to new areas of the globe and to move from a port centred function to a world-wide framework

6. "The Rapidly Changing Technological Environment"

Canada is calling for papers now. Selection will be made on the basis of abstracts between 500 and 1,000 words. Abstracts may be submitted in either English or French and are required by 1 April, 1991.

For more information contact: Richard S. Bryant (FMA) Secretary Seventh International Symposium on Vessel Traffic Services Canadian Coast Guard Box 220 800 Burrard Street Vancouver, British Columbia Canada V6Z 2J8 Telephone: +1 604 631 3720 Facsimile: +1 604 666 6721

On Marine Vapour Recovery Systems

Oil Companies International Marine Forum (OCIMF)

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Executive Summary

This paper has been prepared by a task force comprising OCIMF member company representatives and members of other interested international organizations. It has been written to provide brief, nontechnical information on a range of issues associated with the introduction of vapour recovery at marine loading facilities and to highlight the major safety, operational and control issues that need to be addressed.

The paper is in five sections and the following summary is intended to highlight the points made in each section.

1. Introduction

This section sets the scene by identifying the environmental concerns associated with the release of Volatile Organic Compounds (VOC's) and considers the estimated contribution of ship-related emissions to the global input. The impact on international trade of local initiatives requiring vapour recovery is also addressed. The following statements serve to summarise the section:-

.1 The release of VOC's into the atmosphere is of growing environmental concern as VOC's are believed to be precursors to the generation of oxidants, such as ozone, in the lower layers of the atmosphere, especially under the action of strong sunlight. These photo-chemical oxidants may cause damage to plant life and are responsible for the formation of smogs associated with elevated ozone levels over many large cities.

.2 Of the total non-methane input of VOC's into the atmosphere, natural sources account for half and industrial and vehicular emissions account for the remainder. Of the industrial and vehicular total, some 40% results from vehicle emissions and other distribution activities and about 40% is associated with the use of solvents, such as in painting, cleaning, etc.

.3 It has been variously estimated that VOC's released as a result of ship operations account for between 0.2% and 2.0% of the global input from non-natural sources. The introduction of marine vapour recovery techniques will therefore have a minimal environmental impact unless other major VOC sources have been controlled.

.4 Locally, in some port areas where other sources of VOC release have been controlled, the input of VOC's from marine loading operations could be of significance and vapour recovery techniques could serve to improve local air quality. However, the introduction of vapour recovery should be based on a clearly identified need and a full appreciation of the impact on marine operations.

.5 The introduction of local initiatives will have an impact on the overall marine industry owing to the international nature of trade. The United States Coast Guard (USCG) is developing national safety and design standards for vapour recovery systems to cater for individual State initiatives. The International Maritime Organization (IMO) commenced work on developing international standards in late 1989.

.6 Ensuring the safety of operations is of paramount concern and, when planning vapour recovery systems, safety standards that are at least equivalent to existing operations should be assured.

2. Ship Systems and Procedures

Although the basic concept of vapour recovery is relatively simple, its introduction will have a significant impact on both ships and terminals. This section examines some of the implications for ships and barges and some of the measures that are necessary to achieve at least equivalent safety standards to existing operations. Among the points considered are the following:-

.1 Ships and barges will be required to be retro-fitted with considerable additional equipment in order to load with a vapour emission control system. A vapour header will have to be provided which, for presently inerted ships, could be the inert gas header although its use could result in reduced loading rates. For noninerted ships and barges, a separate vapour header will have to be installed.

.2 In most cases, the vapour treatment plant will be located ashore and ships will need to provide standard manifold connections in order to link into the shore vapour system.

.3 The American Petroleum Institute (API) sponsored a hazard analysis with the aim of comparing the safety of operations with vapour recovery to the safety of existing operations without. The study concluded that, provided the operations were correctly controlled and monitored, equivalent safety standards could be obtained.

.4 The "closed" loading of ships and barges linked to vapour recovery systems will require the fitting of reliable tank gauging equipment. Independent overfill alarms will also be required.

.5 Adequate protection must be provided against the possibility of over or under pressurisation of ship or barge compartments.

.6 Systems must incorporate proven protective devices to prevent the transfer of fire or explosion from the ship to the jetty or vice versa via the vapour piping and equipment.

.7 It will be necessary to ensure that ship and shore personnel have a thorough understanding of each other's operation and are conscious of the necessity to maintain all transfer equipment, controls and safety devices in good working order. .8 Specialised shore-based training will be necessary for ship and barge personnel and terminal operators involved in operating with vapour recovery systems. .9 The efficiency of shipboard vapour recovery transfer systems can be assessed by checking that piping, hatches, etc. are leak tight and a simple in-service check using soapy water is adequate for this purpose.

3. The Ship/Shore Interface

As the title suggests, this section is concerned with issues that are common to both the ship and shore or related to the linking of both by the vapour recovery system. The following is a summary of some of the points discussed:-

.1 There is a need for internationally accepted design standards for vapour manifolds. Ideally, each ship or barge should be fitted with four vapour manifold connections, one located fore and aft of the existing cargo manifolds on both port and starboard sides.

.2 At berths that are equipped to handle a variety of petroleum products, it is most likely that economic and space considerations will result in a single, common vapour transfer and treatment facility being installed to handle the range of product vapours.

.3 Owing to the limited pressure available in the ship or barge's compartment to drive the vapours ashore, compressors, blowers or other devices may be required to boost the pressure in the vapour transfer piping. These devices will most likely be installed ashore as close to the manifold as possible.

.4 Independent pressure/vacuum devices need to be installed in the vapour transfer pipework ashore to protect the ship from the consequences of over or under pressurisation should the compressor or blower controls fail.

.5 When designing vapour recovery systems, it will be necessary to consider handling vapours from inerted tankers, tankers not fitted with inert gas and barges. The implications of handling vapours that could be within the flammable range must be carefully considered, together with the options of inerting, enriching or diluting the gas stream.

.6 When the vapours are to be handled in the non-flammable range, it is essential that gas stream compositions in the vapour recovery system are constantly monitored by oxygen or hydrocarbon analysers and that operations are terminated should safety parameters be exceeded.

.7 Offshore buoy berths present particular problems when considering the installation of vapour emission control systems owing to the pipeline distances involved and the lack of available space for equipment such as compressors. Single buoy moorings, in particular, will be very difficult to modify owing to the complexity of changes required to product swivels, etc. In such cases, options including the installation of a replacement buoy, provision of onboard treatment plants for vapours or use of a dedicated vapour recovery barge will have to be considered.

4 Shore Systems and Safety Considerations

The emphasis of this section on safety and the elimination of fire and explosion hazards by the adoption of proper procedures and by the provision of protective equipment. It is emphasised that the introduction of vapour recovery is very much dependent on the successful development of mechanical equipment such as detonation arrestors which are necessary to ensure the safety of operations.

The following is a summary of the main points discussed:-

.1 System design and operating standards should be based on ensuring that the risks of using vapour recovery are no greater than those associated with present day practices. .2 In-line oxygen or hydrocarbon content of vapour streams should be constantly monitored.

.3 Decisions to handle vapours that could be in the flammable range should only be taken after a detailed risk analysis has been undertaken and on the basis that suitable protective devices are available to ensure the safety of Operations.

.4 To avoid the build-up static charges, the complete vapour recovery system should be electrically conductive. The accumulation of entrained liquids should be kept to a minimum and separators installed if necessary.

.5 Detonation arrestors of flame arrestors need to be developed and proven in test rigs that duplicate actual in-service conditions. The development of vapour recovery systems is dependent on the availability of these protective devices which must be shown to function as designed when handling vapours that could partially choke or block their internals. Devices should be designed so that they can be easily maintained and cleaned in service.

.6 When considering explosion and detonation protection, it should be borne in mind that any one device by itself may not be sufficient as failure may result in potentially disastrous consequences.

5. Treatment Options

This section has been included in order to provide very brief details of the various treatment options that are presently available. It should serve to give some indication of the dimensions of the issues regarding vapour recovery plant selection. The vapour treatment facility will, in itself, result in a plant of considerable complexity and the impact at a particular location should not be understated.

Development of VTS: Legal Considerations

By Dr A G Corbet

Extra Master Mariner, MSc, PhD, FRIN, MNI, Hon. MAIN

Department of Maritime Studies, University of Wales College of Cardiff

(Synopsis of the paper published in the Journal of Maritime Policy and Management, 1989, Vol. 16, No.4, 277-292)

The theme of the paper is that legislative measures, rather than further technological advances, are needed if there is to be any extensive development of Vessel Traffic Services, and the paper notes that, and gives reasons why, this conclusion differs from that of the COST 301 Study with respect to legal liability of Vessel Traffic Services (VTS).

The paper reviews the respective liabilities, civil and criminal, of port authorities, ships and their owners, pilotage authorities, H.M. Coastguard, and of their various servants, namely harbourmasters, marine traffic controllers (including port navigation officers), masters and officers of ships, and pilots, with particular reference to casualties involving ships receiving Active MTC (Marine Traffic Control), and makes some comparisons with liabilities with respect to Air Traffic Control (ATC). The duties of the respective authorities to provide MTC and ATC are also considered and compared.

The paper notes that with the spin-off from defence research and development, and inspired by the commercial aspirations of equipment manufacturers, there has been extensive development of navigational and MTC equipment. Communications equipment continues to improve, and shore-based radar has been refined and integrated with VHF radio directionfinding apparatus and computers to provide sophisticated systems for the detection, identification and monitoring of ships in coastal waters and in port areas and their approaches. Other MTC equipment includes remote sensors for monitoring the condition and status of equipment, and for observing tidal and weather conditions. Closed Circuit TV and specialised hyperbolic systems are also used in some places for monitoring ship movements. There is also the potential of adapting ATC equipment for MTC, e.g. interrogative radar.

However, it is also noted that despite the fact that much of this MTC equipment has been installed for many years, questions have arisen concerning its utilisation, or lack of utilisation, and there have been cases where collisions and strandings have occurred 'under the very noses' of shore-based radar. Some marine traffic controllers have commented that they have superb equipment for observing disasters but are generally unable to use it to prevent them because of restrictive rules of operation, lack of manpower and, for various reasons, the lack of co-operation of VTS users in establishing a more effective system.

The paper points out and considers the various factors which have continually restricted the development of VTS, namely:

1. The fear of civil liability which the port authorities and their servants have when operating VTS. It is suggested that this fear could be removed either by transferring such liability to the shipowners, or simply by excluding it.

- 2. The lack of a uniform national or international regulatory system for training and licensing marine traffic controllers, especially port navigation officers.
- 3. The lack of regulations specifying the duties relating to the provision and operation of VTS, together with criminal penalties for failing to comply with such duties, i.e. similar to the criminal penalties already specifically applicable to marine pilots.
- 4. Arising from 2 and 3 above, the lack of confidence in VTS by its users, especially pilots, which results in minimal co-operation with VTS.

None of these restrictive factors can be overcome without new legislation.

The paper thus concludes that its general hypothesis appears to be valid, that is:

'Legislative measure with respect to the provision, regulation and liabilities of VTS, rather than further technological advances, are now essential if

New Publications

Containerisation International Yearbook 1990 Predicts Developments for the Next Decade

"The next decade will be like the one which preceded it—intensely dynamic. In many respects the technological means will be at hand to implement changes, but in some instances management will not be up to tackling what needs to be done."

In her opening remarks to the Containerisation International Yearbook 1990, just published, editorial director Jane Boyes examines the trends which are likely to shape the industry over the next ten years.

She predicts that a slowdown in average annual growth rates in containerisable trade is likely to exacerbate the overtonnaging that already exists in some sectors, notably the Europe/Far East route. "More positively, the growing appetite of Asia's emerging economic powers could alter cargo balances on some routes. However, it is intra-Asian traffic that will continue to benefit most." Also the creation of the single European market at the any substantial progress is to be achieved in the development of VTS.

The paper notes that this conclusion differs from the findings in the section of the Report of the COST 301 VTS Study Project concerning the implications of legal liability of VTS. The paper explains that the COST 301 Report makes no mention of limitation or exclusion of civil liabilities of parties other than the shipowner, no mention of strict liability with respect to damage to harbour installations, no mention of negligence clauses used by port authorities, and no mention of criminal liabilities. The paper attempts to show how important these particular factors are in relation to the acceptance and development of VTS, and therefore disagrees with the conclusions of the COST 301 task force on the grounds that the task force decided to accept the status quo with respect to legal liability of VTS, when it did not consider all the factors which undoubtedly restrict the development of VTS.

February 1990

end of 1992 is expected to have a significant impact on trade flows, creating a US\$4,000 billion market of 324 million consumers.

The trend for shippers to seek a "quality" service commitment from selected carriers will continue into the new decade. As a consequence of this closer cooperation, the present liner conference and consortia systems are expected to become less relevant to operators' needs. "Some operators now question the merits of a price-fixing system that can no longer regulate prices and has no control over capacity amongst its own members. In addition, the emergence of efficient independents has also reduced the significance of conferences in arterial routes." It is thought unlikely that the conferences covering the major east/west markets will survive the 1990s in their present form

"In such trades they may well have outlived their usefulness since they can no longer guarantee the price stability which their members and shippers crave."

With the tendency for some of the larger carriers now to offer "distinctive" service, the historic role of the consortium operated and marketed under a single banner is becoming inappropriate. "In the coming decade more of those carefully crafted, tightly-knit consortia will break up. Price candidates must be ScanDutch and Anzecs.

The strengthening of trades with Asia has recently led to a shortage of tonnage for both mainline and feeder operations, resulting in higher charter rates, higher resale values and a marked decline in scrappage. However, the buoyant demand for new tonnage has also had the effect of pushing prices up to a level which cannot easily be supported by current freight rates.

In a review of *Containerisation International Yearbook's* vessel register, it is revealed that there is 314,000 TEUs of slot capacity presently on order—the highest level since 1983—and vessels in service at the end of 1989 totalled 3,021,000 TEUs (an increase of more than 5% over the previous 12 months).

Hand-in-hand with this growth in containership capacity has been the demand for containers themselves, with carriers purchasing vast quantities to serve enlarged trade requirements within Asia, Europe, Comecon and the Americas. A review of recent and future box-building activity suggests that container production in 1990 is likely to equal or even surpass the 841,000-TEU level of 1989.

Last year was a record one for manufacturers of reefer containers, with a total of around 60,000 TEUs being produced. The *Yearbook* reports that with reefer construction currently running at around three times the level achieved three years ago, all the signs point to a continuation of the record performance during 1990.

The problems of getting universal agreement on a remote monitoring standard for reefers and the phasing out of ozone-damaging CFC refrigerants are likely to be underlying concerns of the next few years.

Containerisation International magazine's latest equipment survey covered yard gantry cranes and straddle carriers in service at ports and terminals worldwide. Detailed analysis was presented in the December 1989 issue of its Cargoware International supplement, and the findings are also summarised in one of the introductory features to the 1990 Yearbook.

The huge volume of container traffic handled at ports worldwide is presented in the World Container Port Traffic

League. In 1988, the latest year for which full data is available, box movements totalled 73 million TEUs, indicating an increase of nearly 11% over 1987. In volume terms, Singapore is now the second largest containerhandling centre in the world — second only to Hong Kong and well ahead of Rotterdam and Kaohsiung.

The 1990 Yearbook details over 5,000 companies connected with the intermodal industry and contains major reference sections covering the world's containership operators (detailing vessels, ports of call, land and mini-landbridge services and boxes owned or leased); ship managers and brokers; ports and terminals; and CTOs, road and rail services.

The unique Register of Container Carrying Vessels gives 16 categories of information about each of the 4,400 container ships listed.

The equipment industry is described through a series of tabulated guides to container and box chassis producers, handling and stowing equipment manufacturers, as well as a guide to computer software for the container shipping industry. Support services for users of containers are detailed in sections covering leasing, repair, damage surveys and second-hand units, along with a concise guide to marine insurance.

Containerisation International Yearbook 1990

National Magazine Co Ltd 72 Broadwick Street London W1V 2BP

Telephone: 01-439 5000 Telex: 263879 NATMAG G Telefax: 01-437 6886

Prices (airmail outside UK): UK \pounds 115, Europe \pounds 130, other destinations \pounds 155.

The Pricing of Port Services

The Bureau of Transport and Communications Economics, Australia has recently completed study of the pricing practices and policies of Australian port authorities.

Australian port authority reform is an important part of micro-economic reform, as important as the reform of the stevedoring industry, according to the Inter-State Commission.

The Bureau report discusses the implications of current port pricing practices, and how reformed pricing practices could assist in achieving a more efficient Australian waterfront.

The price in Australian currency is \$12.95.

Trace Building, cnr Cooyong Steel and Northbourne Avenue, Braddon ACT 2601

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Maritime Security

By Kenneth Gale Hawkes. (Centreville, MD: 1989). 353 pages.

Foreword by Robert W. Taylor. Illustrations. Appendices. Bibliography. Index. Order from: Cornell Maritime Press, Inc., P.O.Box 456, Centreville, MD 21617. Tel: (301) 758-1075. Price: \$45.

Mr. Hawkes defines "maritime security" as "measures employed by owners, operators, and administrators of vessels, port facilities, and other marine organizations or establishments to protect against seizure, sabotage, piracy, pilferage, annoyance, or surprise." The ultimate objectives of marine security are adequate warning and timely reaction.

His book discusses security principles, tactical procedures, management techniques, and legal considerations that shipowners, offshore operators, and port administrators can utilize in designing and implementing adequate and reliable security. He leads the reader through the basic steps of conducting a security survey and preparing and implementing a security plan.

He describes multiple levels of defense, security zones, perimeter barriers, protective lighting, guards, dogs, alarms, electronic surveillance, access controls and so forth. Considerable stress is given to the importance of selecting, training, and supervising security personnel. Individual chapters are devoted to security management and weapons. Liability issues, particularly those stemming from the use of private or contracted security services are also examined.

Each topic is discussed within the

broad context of maritime security and then in terms of the particular requirements of security aboard ships, at port facilities, and on off-shore platforms. Diagrams and illustrations, including sample security surveys and security plans, further enrich this valuable book.

Mr. Hawkes underscore the need to inculcate security awareness throughout an organization.

The Achille Lauro hijacking incident of four years ago helped focus public attention on maritime security. However, much of what has been accomplished in the wake of that tragedy has been directed at cruise ship and cruise port security. But as Mr. Hawkes points out, cargo vessels and cargo ports are vulnerable and tempting targets for pilferers, saboteurs, terrorists, and other criminal elements. This book is must reading, not only for security personnel but especially for senior port management. (AAPA Advisory)

The Americas

Vancouver Forms Forum For Municipal Dialogue

In recent years, the eight municipalities bordering on the Port of Vancouver have experienced a substantial "in-migration" of people and investment. The result has been unprecedented pressure to provide housing, roadways, and other urban infrastructure.

Along parallel lines, the Port of Vancouver has witnessed considerable growth in throughput spanning all cargo sectors.

It too is under pressure to provide infrastructure—equipment and terminal facilities.

While the requirements of the municipalities and the port may be parallel, they are not always compatible. And in 1989, it became apparent that a better process for communications between jurisdictions on planning and development was essential.

As a step in that direction, the Vancouver Port Corporation established the Port-Municipal Liaison Committee and hosted its inaugural meeting December 1. Represented at the meeting were the City of Vancouver,

the City and District of North Vancouver, the City of Port Moody, the Village of Belcarra, and the Municipalities of Burnaby, Delta and West Vancouver. Each was invited to be represented by the mayor, one alderman and a senior official.

What transpired was a frank, round-table discussion on issues ranging from land use and waterfront access infrastructure, to emergency preparedness. One positive outcome was the striking of a sub-committee to examine the issue of waterborne fire protection. The sub-committee has since met with municipal fire chiefs to take inventory of those Burrard Inlet enterprises that might require waterborne fire protection.

A second meeting of the Port-Municipal Liaison Committee is slated for February when it is anticipated that municipalities will bring to the table details of planning priorities and areas where the port needs to communicate earlier and more frequently on matters of mutual concern. (Port News)

Cold Storage Facility To Be Built at Houston

The Port of Houston Authority Commission voted to lease a site in Jacintoport to International Cargo Network (ICN). The company plans to build a major cold storage facility on the Houston Ship Channel. The agreement includes a long-term lease on 12 acres with an option to lease an additional 8 acres on a development site in Jacintoport, adjacent to the Omniport, an automated handling facility for bagged and boxed agricultural goods.

Construction of the refrigerated and frozen food warehouse will create a Houston entry point for fresh fruits and vegetables and frozen meats and seafood that are currently being shipped through Florida, California, and the Mid-Atlantic states.

"The ICN operation will complement the Omniport facility and further develop Houston as a load center for agricultural commodities," Mr. Jim Pugh, executive director, Port of Houston Authority, said.

The Jacintoport facility will have 236,260 square feet of space for handling refrigerated and frozen bulk cargo. On-site interstate truck brokerage will facilitate local and regional distribution of fresh and frozen foods. A second cold storage facility and intermodal transportation terminal will be constructed to handle containerized cargo. The combined ICN operations will initially add 90 direct jobs and could expand to as many as 500 over the next few years.

International Cargo Network's president, Mr. Harley Martin, a 30-year veteran of the food industry, said, "The decision to locate at the Port of Houston is the result of a three-year study of a concept developed by Scott Brinks, ICN's Vice President-Operations. Don R. Holloway, Chief Executive Officer, has led a Houston based team in arranging project financing and development. We are excited about the potential for ICN and the contributions it will make to the Houston area." The combined annual sales of companies headed by Mr. Harley Martin and Mr. Marshall Anderson, ICN's Executive Vice President, were in excess of \$400 million. Mr. Anderson, with 40 years' experience in the produce business, served as Chairman of the Board of the United Fresh Fruit and Vegetable Association.

Citing the company's competitive analysis of other U.S. ports, Mr. Anderson stated, "It was clear to ICN that Houston offers access to significant markets. The reception we have had from the Port Authority and the Houston business community convinced us that the Houston area has many advantages over competing ports.

Cruise Interest Growing In Port of Los Angeles

WORLDPORT LA, the U.S. West Coast leader in cruise traffic, welcomed 580,778 passengers at its World Cruise Center in calendar year 1989, representing a 13.1% increase over the 513,323 travelers in 1988 who visited recreational stops such as Alaska and the Mexican Riviera.

Last year, 291,058 passengers, a 13.2% rise of 33,926 people over 1988, arrived in the Port on cruise vessels. Outbound travelers in 1989 totaled 289,720, a 13.1% boost of 33,529 over the 256,191 individuals who sailed in 1988.

The World Cruise Center is WORLDPORT LA's state-of-the-art

passenger facility. Featuring spacious, efficient terminals for the convenience of all visitors and travelers, the World Cruise Center can accommodate up to five full-size luxury vessels simultaneously.

The Port is anticipating several major developments this year in its extensive cruise operation. Seabourn Cruise Lines has established headquarters in Los Angeles, designating the Port as a primary stop as of January. Moreover, Carnival Cruise Lines in April is sending the "Jubilee" to Los Angeles, replacing the smaller "Tropicale" to further enhance its expanding West Coast service.

In yet another development, Crystal Cruise Lines, a newly-created division of Japan-based ocean carrier Nippon Yusen Kaisha, is scheduled to call at WORLDPORT LA beginning in July.

Other plans include further upgrading of world-class shoreside facilities. The Port is currently extending the World Cruise Center's concourse 225 feet to enhance accommodations for larger cruise vessels and the increasing number of travelers. These passengers, like the millions of cruise enthusiasts preceding them, will discover that exciting weekend escapes and longer luxury vacations begin at WORLD-PORT LA's World Cruise Center.

Baltimore 3rd Quarter: Foreign Commerce Up

The Maryland Port Commission announced that total foreign commerce at the Port of Baltimore for the first nine months of 1989 increased to 23,501,946 short tons, a 6.4 percent increase over 1988 levels.

According to the figures recently released by the United States Bureau of Census, export commerce rose 8.3 percent to 10,059,909 short tons and import commerce jumped 5.2 percent to 13,442,037 short tons.

The Census Bureau figures are based on the amount of cargo moved through the Port of Baltimore's private and public marine terminals.

Significant increases in bulk cargoes sparked the increased tonnage through the port for the first nine months of 1989. Bulk cargo rose 6.9 percent to 19,551,964 short tons, with export bulk cargo increasing by 6.4 percent to 8,383,449 short tons and import bulk cargo increasing by 7.3 percent to 11,168,515 short tons.

"These figures underscore the importance of the Port of Baltimore as a whole to the economy of the region," said Mr. Richard H. Trainor, Maryland Secretary of Transportation and Maryland Port Commission chairman. "This is encouraging because it shows that Baltimore remains a strong, versatile port capable of handling a variety of cargoes."

Coal continued as the port's largest export bulk cargo, increasing 21 percent to 6,704,577 short tons during the first nine months of 1989. Wheat exports rose 23.3 percent to 167,216 short tons, and soybean exports increased 7.6 percent to 360,568 short tons.

For the first nine months of 1989, petroleum and petroleum products led bulk imports, increasing 49.1 percent to 1,239,003 short tons. Coal and coke of coal imports rose 68.6 percent to 968,243 short tons, and sugar jumped 162 percent to 482,917 short tons.

"Bulk cargoes have always done well at the port," Mr. Trainor said. "The port has excellent bulk facilities to handle a variety of commodities. When we complete the dredging of the port's main Chesapeake Bay channel to 50 feet later this year, we're optimistic that the bulk cargo will continue to thrive."

Total general cargo for the first nine months of 1989 indicated an increase of 4.8 percent over 1988 to 3,949,982 short tons.

Maryland Dredging: Deep Trough Positive

The Maryland Port Commission announced a proposal for a dredged material placement demonstration project in the Deep Trough portion of the Chesapeake Bay. The proposal followed positive findings by a Department of Natural Resources study on the placement of clean dredged material in the naturally occurring trench south of the Bay Bridge.

The proposal for a demonstration project for placement this summer of material from the Craighill Channel — a portion of the 50-foot channel deepening project — followed release of the Department of Natural Resources report which was prepared in cooperation with the Maryland Department of the Environment. The study found that deposit of clean dredged material in the Deep Trough would have no significant impact on Chesapeake Bay water quality.

"The findings of the Department of Natural Resources report confirm what we expected to find — that utilization of this natural formation to contain clean dredged material from the channel will be possible without any significant ecological impact," said Port Commission Chairman and Secretary of Transportation Richard H. Trainor.

The Deep Trough is a relatively narrow area with depths of over 65 feet — what used to be the bed of the Susquehanna River.

"We are pleased with the findings and applaud the joint partnership between Maryland Port Administration, Department of Natural Resources and the Department of the Environment," said Maryland Port Administration Executive Director Brendan O'Malley.

"The next step is to carefully move ahead to complete a small project within the Deep Trough and to further demonstrate the applicability of this resource to contain clean dredged material — thus saving more capacity within Hart-Miller Island for material which must be placed only at that site."

The report evaluated the feasibility of the Deep Trough as a disposal site - one of 161 options considered as part of the MPA Dredged Material Management Master Plan which was released in June 1989. Several options - including the Deep Trough placement - were chosen for further study.

The Department of Natural Resources and Maryland Department of the Environment studied the effects of placing material on the bottom of the trough. Main conclusions of the report were:

• Summer disposal of dredged material would not significantly impact animal or plant life

• Alterations of the bottom surface would not significantly affect commercial or recreational fishing

• Chesapeake Bay water quality would not be significantly impacted

Based on the conclusions of the report, the Maryland Port Administration is moving ahead with designating the Deep Trough as a first step of the demonstration project during the coming summer.

The agency is working closely with

the Department of Natural Resources and Maryland Department of the Environment, which will carefully monitor the project for verification of predicted environmental effects. The Maryland Port Administration is working with the Corps of Engineers, other federal agencies and citizens' representatives to ensure that all concerns about the effects of the project are evaluated.

The Deep Trough designation applies only to the Craighill Channel material that has been studied by the Department of Natural Resources and the Maryland Department of the Environment. Future use of the Deep Trough would only the considered if detailed studies find additional dredged materials to be sufficiently clean.

If it can be successfully demonstrated that clean dredged material can be placed in the Deep Trough with acceptable results, each additional placement project will be carefully evaluated and judged for feasibility on its own merits. Extensive monitoring would take place before, during and after any placement operation.

Bistate Agency Set To Offer Better Service

Speaking before a sizeable gathering of U.S. Merchant Marine Academy alumni and their maritime industry guests, Mrs. Lillian Liburdi, Director of the Port Authority's Port Department, outlined the bistate agency's present and recent efforts to ensure that the Port of New York and New Jersey can continue to offer superior service to ocean carriers and all other members of the international shipping community.

Calling attention to what has happened over the past year, Mrs. Liburdi stated: "The International Longshoremen's Association and the New York Shipping Association teamed up to slash container cargo assessments by more than half on long-haul cargo. The Port Authority stepped in and offered a further cost incentive for long-haul cargo on rail. More than 30,000 containers have been handled through the Port Authority's container incentive program alone this year."

She cited this program as a specific example of the new and aggressive approach to business that has been taken at this port which underscores

the willingness and ability of diverse port interests to work together for the benefit and future growth of the Port.

The Port Authority official also stated: "We need to become more active in managing and bringing about a change in issues that can severely limit our future opportunities. The condition of the region's and the nation's infrastructure will impact our competitive position. While the Port Authority is in the midst of a five-year, \$6 billion capital program to upgrade its facilities, it is clear that we need to work as a community to persuade federal, state and local legislators, and the public at large, that investment in infrastructure and transportation is critical to the national and regional economies."

Emphasizing the need to become more aggressive in regard to environmental issues, Mrs. Liburdi also discussed the problems of dredging and dredged material disposal. She stated: "Here, too, we need a consistent national policy that manages a balance between a port's need to remain economically competitive with the quality of the environment. As clear stockholders, we should involve ourselves in this discussion individually and as a port community."

(Via Port of New York-New Jersey)

National Policy Sought On Dredged Materials

The Port Authority of New York and New Jersey has called for a comprehensive national policy for the handling and disposal of dredged materials that would be applied uniformly to all port regions. Seeking means that would be both economically and environmentally feasible, the Port Authority's Port Department Director, Mrs. Lillian Liburdi, testified before a U.S. House of Representatives Subcommittee on Water Resources during a hearing held in Union Beach, NJ.

"National leadership," she stated, "is needed and required. Without economic and environmentally safe disposal means, the impact on the citizens and the national economy will be significant. Our goal at the Port Authority is to provide for both smart economics and a protected environment. This is not an impractical ideal. The facts, researched by the scientific community and government show that both are achievable. Choosing one over the other will not serve the region-not here in Monmouth County nor up in Essex County."

Mrs. Liburdi also testified, "If excessive economic costs are imposed on dredging and its disposal, it is not an exaggeration to say that the Port of New York and New Jersey may lose commercial shipping business and public and private terminals may close." She also told the panel of the House Public Works and Transportation Committee, "Currently, these activities account for over three percent of the gross regional product, roughly \$14 billion in economic activity, 200,000 jobs, \$4 billion in payroll and over \$500 million in regional taxes."

"Not only is dredging and subsequent ocean disposal essential for Port Newark and Elizabeth marine terminals, the nation's premier containerport," she stated, "it is also essential for channels such as Compton's Creek, a purely commercial fishing and recreational navigational channel that the U.S. Corps of Engineers expects to dredge in fiscal year 1990." Mrs. Liburdi explained, "Without dredging, most shipping, commercial fishing and many water-related recreational activities would gradually come to a halt due to lack of sufficient depth. This is true of the bistate region. It is true of most regions of the country."

The Port Department Director called upon Congress to enact policies and programs to prevent the polluting of coastal waters and thereby prevent the sediments that complicate the disposal of dredged materials. She noted that in the bistate port alone some \$20 million had been spent studying the disposal of dredged material and developing alternatives to ocean disposal. She stated, "The findings conclude that for our densely populated region of over 17 million people, the only economical and environmentally sound option available is to dispose of the majority of dredged material in the ocean. In addition, wherever possible, dredged material that is predominantly sand should be used as a construction material or for beach restoration projects."

Mrs. Liburdi also testified that not all dredged material could be disposed of in the ocean. Approximately five to ten percent of the material would not meet ocean disposal criteria. She cited alternative means as proposed by the U.S. Army Corps of Engineers in their Dredged Material Disposal Management Plan with regard to the use of "subaqueous borrow pits."

"The scientific evidence shows," she stated, "that upland dumping would promote oxidation of the dredged material and allow leaching of some contaminants into groundwater. On the other hand, if the material is left in a marine environment, the contaminants will adhere to the material sediments. If the contaminated material is covered with clean material, it is capped and isolated from aquatic biota. This is the well-founded principal behind subaqueous borrow pits."

(Via Port of New York-New Jersey)

NY&NJ Official Outlines Latest Anti-Drug Efforts

Speaking before a gathering of The Maritime Association of the Port of New York/New Jersey, Mr. Joseph Rivera, Chief Contraband Enforcement Team, U.S. Customs Service, outlined the Super Carrier Initiative Agreement (SCIA), noting that it has been developed to meet the needs of ocean carriers that have made significant efforts to prevent smuggling aboard their vessels at foreign and U.S. ports but have continued to suffer penalties and seizures.

Noting that since 1985 over 400 ocean carriers have joined the SCIA program, he stated that these carriers are not only less vulnerable to penalties, but are also making an important contribution to Customs goal of achieving a drug-free environment.

He stated that Customs is not in the business of seizing vessels and that its emphasis is on "prevention," not interdiction.

He said that there would usually be no penalty if a carrier provides specific information leading to discovery and seizure of drugs by Customs. He also stated that there is generally no penalty imposed if the ocean carrier discovers the drugs and turns them over to Customs.

On the subject of "Port Seizure Analysis," Mr. Rivera said that in the event of a drug-related violation, his agency will initiate a joint PSA with the ocean carrier's representatives.

He explained that Customs will be represented by a three-unit team comprised of an Inspector, Special Agent, and an Intelligence Analyst. "The PSA will be initiated at the domestic point of seizure," the Customs official said, pointing out that its main purpose is to uncover how drugs were placed on board so that further violations can be avoided. He said it is not Customs' intention that the PSA should interfere with any domestic or foreign investigation relative to the drug violation.

The briefing by the Customs official and representatives of the U.S. Coast Guard was held at the Whitehall Club and was sponsored by the Maritime Association which gathers port traffic information on a continuous basis. The association provides a highly informative forum in which the problems of the maritime industry can be put into focus and subsequent solutions can be found.

(Via Port of New York-New Jersey)

New Video Shows N.C. Ports Sights

The N.C. State Ports Authority Business Development staff believes the very best way to market the North Carolina Ports is to bring the prospective customer to the terminals at Wilmington and Morehead City and let that customer see the operation first-hand.

Maybe the next best way to market the North Carolina Ports will be through the new eight-and-a-half-minute video currently in production.

The Authority's Public Affairs Office, working with The Telemedia Group in Wilmington, began the project in January. Shoots at the Wilmington Terminal have included a cameraman climbing up one of the container cranes to shoot the cargo through the operator's cab. An extremely productive day of shooting at the Morehead City Terminal netted some "Star Wars"-like video shot inside the dry bulk warehouse.

The video is designed to parallel a new four-color marketing brochure, also in development. In addition to describing the two deepwater ports, both the video and brochure contain segments on the intermodal terminals at Charlotte and Greensboro. When completed, the video will be included in marketing presentations, as well as in addresses to civic and community organizations.

(North Carolina Ports)

Portland Gears Up for Terminals Master Plan

To chart the growth of its marine facilities over the next 20 years, the Port of Portland is starting the development of a new marine terminals master plan. The current master plan was developed in 1981.

The new plan will reflect changes in market opportunities, operations and cargo mix. When the 1981 master plan was completed, the Port of Portland was handling cargo at the rate of sixand-one-half million tons a year. Present cargo volumes, between nine and ten million tons a year, have met 1981's cargo growth forecasts in the "optimistic" or high range.

In developing the new master plan, the Port will rely heavily on input from the marine community, Port staff with assistance from a technical advisor and public participation. The study will take about two years to complete.

(Soundings)

Port of Seattle Seaport: 1989 Highlights

The Port of Seattle showed steady gains at its airport and seaport operations in 1989, posting record levels of international business in several key trade categories, and adopted a new Strategic Mission and Goals to lead the way into the 1990s, according to Port of Seattle Commission President Patricia Davis.

Port highlights for 1989 include:

Port of Seattle Marine Facilities

An all-time high of 12.3 million metric tons of cargo passed through Port facilities, topping the 1988 total of 10.7 million metric tons by 15 percent. A 10 percent increase in container volume by the current carrier base, an 89% increase in grain exports and a 24 percent fruit export gain contributed to the new mark.

Port of Seattle New Strategic Mission

The Port Commission, after a thorough public process, adopted a new Mission and Goals Statement for the Port. This new mission will move the Port forward in strengthening our core business operations in aviation and marine transportation and increase opportunities for the Port of Seattle to become an international commerce center.

Port of Seattle Seaport

More containers were handled by the Port in 1989 than at any time since the loss of Sealand in 1985. The Port's existing steamship lines added an average of 10 percent, or nearly 90,000 TEUs to their activity during 1989, despite a fiercely competitive climate which caused the loss of several steamship lines. According to Ms. Davis, anticipated 1990 increases in steamship line capacity should bring an additional 10 percent TEU capacity increase during that period.

Steamship lines adding ship capacity to their Seattle rotations include: China Ocean Shipping Co. (COSCO) added two 2,700-TEU capacity vessels; Evergreen Marine Corp. increased their container activity through Seattle by 40 percent; Hanjin added larger vessels to their Seattle rotation; and Matson Navigation Company expanded from a bi-weekly service to a weekly service.

To accommodate the growth of steamship lines, the Port continued to develop state-of-the-art container facilities in 1989. A \$3.9 million development project at Terminal 25 nearly doubled Matson's space, allowing them to expand to a weekly service. The Port significantly enhanced the capability of its Terminal 30 container facility with construction of two new terminal buildings, expansion of the terminal's acreage, and the acquisition of three 100 foot-guage container cranes. At Terminal 42, the Port opened a state-of-the-art computerized gatehouse to speed the movement of containers into and out of the Terminal.

In response to increased shipper demands for additional intermodal options, the Port opened a \$3.5 million on-dock intermodal railyard at Terminal 18. Along with Burlington Northern and Union Pacific near-dock yards, the on-dock facility offers Port customers more intermodal choices than any other West Coast port.

The Seattle harbor handled over a million containers for the third year in

a row, with cargo volumes up slightly from 1988, to 1,041,000 TEUs, compared to 1,024,000 TEUs in 1988.

As the value of the dollar remained low, U.S. exports continued to dominate trade at the Port. The value of foreign exports are expected to rise by three percent to an estimated \$5.85 billion in 1989, from \$5.7 billion in 1988. The value of total foreign trade through the Port is expected to rise to an estimated \$26.7 billion in 1989, from \$25.7 billion, an increase of four percent.

Grain was the Port's "star" export commodity during 1989. Grain exports soared to a new high of 3 million metric tons, from 1.6 million metric tons the previous year. Grain exports rose dramatically as a result of expanded Gulf port shipments to the USSR, which shifted some of their usual grain exports to the Port of Seattle.

Fruit exports also rose during 1989, up 24 percent over 1988 levels. Three million 46-pound cartons of fruit were shipped out of the Port, compared with 2.4 million the previous year. Total fruit shipments during the year rose 17 percent, to 4.1 million cartons, from 3.5 million cartons.

Container import volume decreased in 1989, dropping six percent to 355,238 TEUs, from 378,785 TEUs the previous year. Auto imports were an exception, rising 13 percent to 43,729 vehicles, from 38,654 in 1988. The value of foreign imports in 1989 rose five percent over the previous year, at an estimated \$20.8 billion, from \$19.9 billion in 1989.

The Port continued to improve upon its unique value-added distribution services for shippers during 1989. The Seattle Truck Contract Program began a new program for "fluffy" freight that saved shippers \$1 million collectively, while adding over \$1 million in new business. The number of cartons entering and shipped out of the Port's warehouses rose by five percent, to a high of 17.8 million, from 17 million the previous year.

The Port expanded its Foreign Trade Zone (FTZ) authority in 1989 to 1,400 acres, from a previous 1.4-acre site. The huge increase incorporates virtually all services and facilities of the seaport and Seattle-Tacoma International Airport into one of the largest FTZs in the United States.

Labor and management worked more closely than ever before in 1989,

which led to a record increase in container crane productivity.

Container crane productivity for all terminals averaged nearly 24 moves per hour in 1989, compared with 17 moves per hour five years previously.

New Strategic Mission and Direction

The Port started 1989 with a new executive director, Mr. Zeger van Asch van Wijck, who brought both knowledge as an international trade expert and innovative managerial skills.

Under his leadership the Port launched the Strategic Management Plan, which will guide the Port through complex issues of the 1990s. The Strategic Management Plan's Mission and Goal Statement, adopted in December by the Commission, positions the Port to further enhance its role as an international commerce center, while providing a quality life for King Country citizens.

According to Mr. van Asch van Wijck, the Port's role in sea and air shipping has grown beyond the point of simply counting containers and "We will always move passengers. cargo and people, but it has become increasingly important to develop the electronic transactions to keep information moving. The Port of Seattle has been a major innovator in developing new electronic data interchange systems, and in 1989 we continued to be at the forefront of new technology, through development of the Puget Sound Community Cargo Release System in coordination with the Port of Tacoma," he said.

"We are fortunate to be strategically located in the financial center of the Pacific Northwest, which makes us the international center of commerce for our region. We are making investments to continue balancing further economic progress with our commitment to retaining the unique quality of life in this region," he added.

Port of Seattle's New FTZ Utilized

The Port of Seattle's newly expanded 1,400-acre Foreign Trade Zone (FTZ) authority was utilized recently when a two-piece generator from Switzerland and a six-piece steam turbine from Japan were shipped to the Port's Terminal 28, where they were assembled to form a generating set. By swiftly activating a portion of the Port of Seattle's new Foreign Trade Zone, the shipper realized extensive savings on the cost of U.S. Customs duty.

Without the benefit of the Port's Foreign Trade Zone, duty would have been assessed at the rate of 3 percent for the generator and 7.5 percent for the steam turbine. The Port's FTZ authority allowed the pieces to be combined into a generating set, at the rate of 3 percent.

The new Foreign Trade Zone authority, which encompasses nearly every facility of the waterfront terminals and Seattle Tacoma International Airport, allows the Port to capitalize on opportunities as they occur, by quickly activating portions of the Port that are needed for the transactions. "We're pleased with the speed with which the Port of Seattle was able to accomplish expansion of the Foreign Trade Zone," said Mr. Bill Gwinn, vice president of Geo. S. Bush & Co., Inc., the Customs broker and freight forwarder for the generating set.

Port of Seattle: Strong Ratings Assigned For New Bond Issuance

Standard & Poors Corporation, Moody's Investors Service, and Fitch Investors Service have assigned ratings of AA-, Single-A1, and AA-, respectively, to the Port of Seattle's \$145 million Junior Lien Revenue Bond issuance.

Moody's cited the Port's "strategic importance and sound financial operations supported by a combination of both marine and aviation revenues as well as a general purpose tax levy."

According to Mr. Zeger van Asch van Wijck, the Port's Executive Director, "the sale of these bonds makes it possible for the development of projects which support the Port's newly-developed Strategic Mission and Goals. We believe that these investments will position the Port to serve our customers more capably infuture years, enhancing our role as an international commercial center serving the Puget Sound region. These bond ratings underscore the Port's strength, putting us in the ranks of the top consolidated ports in the United States."

Proceeds from the bond sale will be used to satisfy the demand for air and water transportation facilities in the region. Specific projects include expansion of the parking garage and concourses at Sea-Tac Airport, the Noise Remedy Program, and acquisition of key properties to expand container operations.

Of the \$145 million issuance, \$90 million is earmarked for aviation projects, \$30 million for marine projects, and \$25 million to refund existing Port bonds issued in 1985.

The five-year revenue bonds, which may be purchased for \$5,000 each, are available through any stockbroker in the State of Washington.

This revenue bond issuance is the first of two. The Port plans a second issuance of approximately \$150 million within the next two years to complete additional profjects. Total costs of the projects to be paid from the proceeds of the Series 1990 bonds, the planned second issuance, and other resources of the Port are estimated at \$454 million.

Port of Tacoma Global Player in Shipping

The Port of Tacoma became a global player in shipping trade during the decade of the 1980s.

International trade grew in dollar value from \$3.4 billion in 1980 to more than \$25 billion in 1989. "These years marked Tacoma's intense penetration of the Pacific Rim shipping market," explained Mr. Patrick O'Malley, president of the Port of Tacoma Commission. "We aggressively expanded our international marketing efforts, establishing overseas offices, and increasing our participation in stateside and international world trade organizations and relationships."

In 1980, sister port relationships became a part of the Port of Tacoma's international outreach. In November of that year, the Port's first sibling relationship was established with the Port of Belawan, Indonesia, that country's busiest rubber-export outlet, in 1980. "We were moving nearly 130,000 tons of rubber a year from Southeast Asia over Port of Tacoma docks in the early 1980s, and most of that rubber was coming from Belawan," said Mr. Chuck Doan, deputy executive director, trade and operations for the Port of Tacoma.

"Establishing a sister port relationship with Belawan was our initial step toward extending formal trade relations to include a more cooperative exchange of information that would enhance the operations and development of both ports," Mr. Doan added.

In that same spirit of cooperation, the Port established a sister port relationship with Kitakyushu, Japan in 1984. Japan has remained Tacoma's largest trading partner throughout the decade, furnishing approximately 48 percent of the total value of goods traded in the last 10 years.

Since 1984 the Japanese and American ports have been exchanging cargo handling information, and the Port of Tacoma, in conjunction with the City of Tacoma (a sister city to Kitakyushu since 1963), has participated in the Kitakyushu International Food and Gifts Fair, Japan Maritime Day and the Port of Kitakyushu's centennial celebration.

The Port of Kaohsiung, Taiwan is Tacoma's latest addition to the sister-port family. In 1988, the two ports agreed to enter into a cooperative relationship in which the ports discuss organizational systems, port management and physical port development, including harbor engineering and cargo handling.

"We expect to strengthen and extend trade opportunities, as well as benefit from the information exchange with Kaohsiung, the third largest container port in the world," said Mr. O'Malley. Taiwan is Tacoma's second largest trading partner.

Another vehicle of international trade development, driven by the Port's rising importance in world trade, emerged in 1985. The World Trade Center (WTC) Tacoma, a five-story cornerstone at the southeast end of the Port, offers members marketing opportunities, facility use and translating services at more than 167 World Trade Centers worldwide.

WTC-Tacoma also offers members use of the computerized Network system—an international bulletin board informing users of available services, trade fairs, property sales, company profiles, and market research. Network also features an electronic mailbox system that can relay messages to members around the world at a cost much less than traditional telephone rates.

"The World Trade Center Tacoma is an important part of Pierce County's mission to promote international commerce," said Mr. O'Malley. To serve its growing international customer base, the Port of Tacoma opened international offices in Japan, Korea, Singapore and Hong Kong.

"Having Port employees accessible locally to our customers makes sense," said Mr. Doan. "Our field representatives understand the daily operations of our international customers and can make the most informed and timely decisions," he added.

"Aggressively developing our position in the world market is what moved the Port of Tacoma from its ranking of 72nd largest in the world in 1980 to 20th largest in 1989. And it will be an even bigger factor in the 1990s as marine commerce and technology advance escalating world trade opportunities," Mr. O'Malley predicted.

(Pacific Gateway)

Tacoma Commission Approves Land Purchase

Port of Tacoma Commissioners approved the purchase of 12 acres of waterfront land on the Blair Waterway for \$3.2 million in a March 8 commission meeting. The land is located near the Port's Terminal 4 container facility.

"Available land is the prime component of any West Coast port's operation and continued growth," said Port Commission president Pat O'Malley. "Tacoma is in the enviable position of having land that we can offer our customers that will give us a good return on our investment as well as increase our profitability.

"This is an excellent addition for the Port," he added. "It will enable us to further enhance our terminal facilities, bringing new cargoes and jobs to Pierce County."

The land was first offered on the market in 1980. Currently operated as the Fairliner Marina, the site consists of both wet and dry marina storage. The former owner will work with marina tenants to assist them in relocating to other suitable facilities in Commencement Bay.

Port of Tacoma Earns World Bank Interest

While the Port of Tacoma's advantages of modern intermodal facilities and longshore productivity attract new customers, these same advantages are also attracting a number of industryrelated conferences and workshops who want to study the Port's successful operations in greater detail. During the last year, the Panama Canal Commission, the Permanent Interna-Association of Navigation tional Congresses, and the American Association of Port Authorities have all held major conferences in Tacoma and focused on Port activities.

The latest example of this is the World Bank, that recently announced it has picked Tacoma as the site for its annual training session. Fifteen to twenty members of the World Bank are scheduled to visit the Port of Tacoma from June 11-13.

"The Port is very proud that we have been chosen for this visit," explained Mr. Pat O'Malley, president of the Port of Tacoma Commission. "Education is a two-way street. Not only will they learn from seeing our facilities, operations, and management, but I'm sure we'll learn something from the caliber of people that the World Bank brings."

During their three-day visit, World Bank members will spend time in various Port departments, from operations to finance, to get a close-up look at how the Port functions.

According to Mr. John R. Lethbridge, the Bank's ports and aviation advisor, Tacoma was chosen for a number of reasons.

"The Port of Tacoma is clearly a successful port. We hope that some of it might rub off. It has the right mix of activities, as well as a mix of Port-operated and leased facilities. Tacoma also has an extremely good reputation for a Port that's well-run."

One of the World Bank's major functions is to loan monies for port developments in lesser developed countries. Not only does the Bank assist with financing, but the staff advises in the planning, infrastructure development, management and operations.

Their port's advisory staff is comprised of professionals with many years' experience in finance, engineering, shipping and transport.

Africa/Europe

IPER: Int'l Reputation Further Consolidated

The year 1989 has further consolidated IPER's international reputation as a port training and research institute. Indeed, IPER has received a record number of 237 participants from 60 countries for a total of 32 courses, seminars and on-the-job-training programmes which have been organized in cooperation with its counterpart organizations:

- The United Nations Conference on Trade and Developpement (UNC-TAD),

- The International Maritime Organization (IMO),

- L'Ecole Nationale des Ponts et Chaussées (ENPC Paris),

- L'Association pour le Développement de la Formation Professionnelle dans les Transports (AFT, Paris)

The year 1989 has allowed IPER to reinforce its structure, with the nomination on 1st September 1989 of Gustaaf de Monie as Programme Coordinator who will work in close cooperation with the "international training" unit of the Port of Le Havre. Mr. de Monie has a world-wide reputation for his activities in the fields of port management, training and technical assistance to developing countries. From 1970 to 1982 he was a member of UNCTAD's Ports Section and from 1983 — 1989 Director of APEC in Antwerp.

With the arrival of a Course Coordinator starts a new era for IPER. The next development phase will see a further emphasis on subjects which are in the news or retain special attention in maritime and port circles. In future, programmes will be systematically developed and proposed in French and English, in order to promote IPER's reputation world-wide.

The new impulse given to IPER is already reflected in the 1990 programme, which we have the pleasure to present in this leaflet, and which offers not less than 40 different seminars, courses and fellowships, spread out over the year. We trust many ports and port organizations will consider the 1990 programme as a complement to their own human resources development schemes, and we are looking forward to welcoming their staff in the near future at one of IPER's training activities.

Since its inception in 1977, the Port Training Centre of Le Havre (IPER), has endeavoured to promote the knowledge of techniques used in maritime civil engineering works, to present and explain new ship and cargo-handling methods in ports, and to follow-up new developments in maritime transport and their effects on ports. As a result IPER has organized a total of 202 port training programmes.

In order to respond still more effectively to the training needs of ports, maritime transport companies, consulting firms and public authorities responsible for the transport chain, IPER proposes since 1986 three alternative programme types:

- Courses: medium and long-term programmes carried out by a team of educational specialists which aim to transmit know-how or to impart specialized skills in a particular area of port management or operations.

- Seminars: short-term training activities, conducted by internationally reputed lecturers, presenting and analysing the latest technical, commercial and or operational developments.

- On-the-job-training programmes: short and medium-term training activities, offering participants an opportunity to improve their knowledge of specific subjects, and to obtain practical experience through on-the-job observation and training.

On your request any of the training activities presented in this brochure, or any other training programme in the fields of maritime civil engineering works, port management and operations, as well as international transport can be tailor-made to suit your organization's special needs, and can be run at dates convenient to your organization. For further information please contact: the Programme Coordinator of IPER

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Seagoing Goods Traffic Active in '89 Amsterdam

Seagoing goods traffic in the Port of Amsterdam increased further in 1989 due to the rise in the general cargo and "other seagoing goods traffic" sectors, according to the Port Management of Amsterdam.

Compared to 1988, total tonnage gained 1.6% to 28.7 mln. tonnes.

Transhipments in the bulk sector, dry as well as liquid, both fell back during 1989. A total of 9.9 mln. tonnes (-5.8%) were handled in the dry bulk sector; liquid bulk movements declined by 4.1% to 12.6 mln. tonnes. There was a sharp gain -9.2% to 2.9 mln. tonnes in the general cargo sector. The "other seagoing traffic" sector, which includes sand and gravel, has been rising steadily in recent years, and posted a strong 71.8% increase to a total of 3.3 mln. tonnes.

According to provisional figures, total transhipments in the entire Amsterdam-North Sea Canal port region reached about 45 mln. tonnes. Last year, 4,157 ocean-going vessels were handled in the Port of Amsterdam, 75 more than in 1988. These ships had a total gross registered capacity of 30.7 (1988: 29.7) mln. tonnes.

A record 53 cruise vessels called at the Port of Amsterdam in 1989. Last year, more than 100 ha of industrial sites were leased out in the port area. A rough estimate indicates that these new investments will create about 1,500 direct jobs.

The Port Management is forecasting

total transhipments of about 30 mln. tonnes for 1990. It also expects that more industrial sites will be given out, and a further increase in the growth of the cruise market.

Gijon Bulk Terminal Nearing Completion

The final stages in the construction of the new bulk terminal EBHI (European Bulk Handling Installations) at the Port of Gijon are now almost finished. At the moment the equipment is being tested and full-scale trials are expected to begin by April/May after all tests have been completed. EBHI will become operational soon afterwards.

The new terminal, built on the "Minerales" quay, is 652 metres in length, with a draft of 21 metres alongside. Unloading facilities include two grab-unloaders, of 2,200 TPH each. The stockyard, which is equipped with two 2,800 TPH stacker-reclaimers, provides up to 535,000 cubic metres of storage capacity. Additional storage capacity is available on a 22 Ha esplanade in Aboño.

Direct transhipments on the "Norte" quay, which has an 11-metre draft, open up new possibilities for coal importers. Vessels of up to 35,000 DWT can be loaded at a rate of 2,600 TPH.

Other features include facilities for quality control, weighting, checking, and advanced automation for the control and maximum efficiency of the operations.



PORTS AND HARBORS May, 1990 33

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General Cargo Record For Port of Gothenburg

With 8.25 million tons of general cargo handled in 1989, the Port of Gothenburg had its most successful year ever as far as general cargo is concerned. Imports increased by five percent and exports by nine percent. Unit-loads covered 86 percent of the general cargo shipped via the port.

The Port of Gothenburg, on Sweden's west coast, is handling a considerable part of the combined Scandinavian deep-sea shipments.

Almost one third of the port's general cargo volumes is transit cargo between overseas markets and other Nordic countries than Sweden.

Paper, fruit, and car increases

The increase in general cargo shipments is composed of several elements. One of the most important is the system of paper and timber shipments from Swedish inland mills to UK and Continental destinations that gave Gothenburg new volumes last year. But there is also considerable increases e.g. in the import of fresh fruit and car shipments. Short-sea ferry traffic was also successful.

Oil held back total results

Two-thirds of the total cargo turnover at Gothenburg is oil, crude as well as refined. Oil showed a one percent decrease last year. Because of the large volumes involved, this slight decrease in oil traffic stopped the Port's total cargo throughput increase last year at two percent, despite the relatively larger increases in the general cargo field. Total tonnage was 24,295,000 tons.

Container traffic rise

Container traffic through Gothenburg rose by three percent during 1989, reaching 269,420 TEUs (340,579 TEUs if empties are included).

Total unit-load traffic was 724,750 units, a five percent increase over the preceding year (unit-load defined as containers, flats, lorries, trailers, semitrailers, and railway wagons).

Four-million-plus passengers

Another record set at Gothenburg last year was passenger traffic, where the four-million mark was passed for the first time. A total of 4,275,000 departures and arrivals were registered. Most of the passengers used the Port's Denmark, Germany, Holland and Great Britain services.

ABP Pre-tax Profits Up to £57.2 Million

Associated British Ports Holdings PLC has announced a $\pounds 57.2$ million pre-tax profit for the year ended 31st December 1989 — a 23% increase on the previous year's profit of $\pounds 46.5$ million.

Profits from the Company's ports and transport activities amounted to £36.3 million after severance costs of £5.1 million (1988: £23.4 million after severance costs of £5.0 million).

Property activities contributed £18.0 million (1988: £23.0 million). Earnings per share increased by 22% from 36.1p to 44.0p.

The Directors are recommending a final dividend of 8.0p per share which, together with the interim dividend of 4.5p per share declared on 14th September 1989, makes a total of 12.5p net per share in respect of 1989, an

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Entry qualifications : A degree of a CNAA recognized University or Completed Higher Vocational Education (Hoger Beroeps Onderwijs) or H.BEC/H.TEC Diploma. The minimum age of entry is 23. Exceptionally, a student of 27 years of age or over without the approved qualifications may be admitted, provided that he has had at least four years' experience in a post of professional or administrative responsibility.

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increase of 25% on the 1988 dividend of 10.0p per share.

The Directors are also recommending an increase in the Company's issued share capital by means of a 1 for 1 Scrip Issue. A similar 1 for 1 Scrip Issue was made in 1986.

Abnormal costs relating to the abolition of the National Dock Labour Scheme totalling $\pounds 19.6$ million net of tax have been dealt with as an extraordinary item in the accounts.

In his statement on the results, the Chairman, Sir Keith Stuart, comments:

"The year 1989 has seen not only a strong financial performance by the Company but also, in the abolition of the National Dock Labour Scheme, the most important development in our port services business since the Company's privatisation in 1983."

Ports

The short-lived dock strikes in July, which affected some of ABP's ports and caused regrettable disruption to port customers, had little impact on ABP's overall performance. Port cargoes increased to 95 million tonnes (1988: 93 million tonnes). The Group's ports are now in a much stronger position to compete with both UK and Continental rivals.

At Hull, business has already expanded with the re-opening of the Hull Container Terminal and the introduction of new bulk traffics.

In South Wales also, new cargo handling arrangements are leading to additional business, including considerable extra tonnage of timber in recent months. Southampton, whilst remaining one of the country's top vehicle import/export centres, also has a growing business in handling bulk cargoes.

The Company's plans for the Humber ports moved forward in July when the ABP (Hull) Bill received Royal Assent, giving powers for the construction of three roll-on/roll-off terminals in the River Humber at Hull. The ABP (No. 2) Bill, which includes provision for expansion at Immingham, King's Lynn and Port Talbot, received its Third Reading in the House of Commons in January 1990 and its Second Reading in the House of Lords in February 1990.

Property

Commenting on property activities Sir Keith states:

"As foreshadowed in my statement last year, many of our more important schemes are not due to be completed until 1990 and beyond. In addition, the general downturn in the property market had an impact, particularly in the second half of the year. In consequence, Grosvenor Square Properties' contribution to profits in 1989 was below the level of the previous year."

Finance

Group net borrowings totalled £291 million at the end of 1989 (1988: £128 million) and compare to a book value of shareholders' funds at 31st December 1989 of £279 million, or £468 million if adjusted to include the excess of £189

New Stevedoring Setup In Port of Southampton

Associated British Ports (ABP) have announced a change in arrangements for providing cargo-handling services at the port of Southampton.

For some years independent stevedores have operated in the port, and following the abolition of the National Dock Labour Scheme in July last year, Berkeley Handling Limited undertook provision of stevedoring services for ro-ro cargo. As a result, ABP's involvement in cargo handling was reduced.

Under the new arrangements now being introduced, ABP will be withdrawing completely from the provision of cargo-handling services. A number of competitive tender applications from third parties interested in providing stevedoring have been considered by ABP. Following a thorough appraisal, ABP are entering into an arrangement with a new company, to be known as Southampton Cargo Handling Company, who intend to employ a number of the former Registered Dock Workers in the port, together with other staff experienced in cargo handling. There will be no interruption of services to customers during the transition period.

Southampton's Port Manager, Mr. Andrew Kent, said:

"Independent stevedoring companies will be able to concentrate on the needs of customers and provide them with specialist services in a competitive market. This will be of benefit both to customers and to the port of Southampton." million in the valuation of land over its book value disclosed by the external professional valuation made as at 31st December 1988.

The increase in net borrowings during the year was largely due to the payment of some £30 million before tax relief relating to the abolition of the Dock Labour Scheme and investment in property development work in progress of £111 million during the year.

The level of borrowings will be reduced as developments are realised.

Prospects

On prospects for 1990, Sir Keith comments:

"Our ports business has made a strong start in 1990, following the substantial increase in the level of profits achieved in the second half of 1989. Prospects for the year are excellent.

"Although short-term prospects in the property sector are clouded by the current downturn in the market, we have a well-balanced development programme both at the ports and elsewhere, underpinned by a rising rental income. The level of property profits in 1990 will be influenced by the timing of sales of some of our larger projects."

Floating Cement Silo At ABP Port of Hull

The ABP port of Hull has attracted a major new cement importing business. Bison Cement Limited have based the mv *Aladin* (25,051 dwt) at Hull to act as a permanent floating cement silo.

The vessel has been fitted with dust-free state-of-the-art self-discharge equipment which serves the dual purpose of unloading cement into land-based silos and discharging fresh cargoes of cement from visiting ships into the mv *Aladin*.

Mr. Mike Fell, ABP's Port Manager at Hull, says: "I am particularly pleased that Hull has attracted a major dry bulk import business as, prior to the abolition of the former Dock Labour Scheme, this type of traffic eluded Hull. Customers wishing to handle specific cargoes as a natural extension of their existing manufacturing or processing business are now free to do so. Bison's presence is a welcome addition to the existing range of port-based industry.

Asia/Oceania

PMA Control Tower Now Fully Operational

The Port of Melbourne's imposing Harbour Control tower is now fully operational and occupied. It houses the port's new radar-based Vessel Tracking System which went into operation at the end of November last year.

The system was designed and developed jointly in Australia by the PMA and Krupp Atlas Elektronik (Australia), and that company's General Manager, Mr. John Hazell has great hopes for the new system.

John said, "Krupp Australia has made a conscious decision in its investment to create an Australian centre of excellence for the maritime VTS world market. The PMA project was won by KAE (Aust) against international competition and its successful commissioning gives us optimistic expectation of success in the export of similar systems."

"Vessel Tracking Systems are a relatively recent innovation in the maritime environment with only a small number of systems installed world-wide so far. Judging by the increasing interest being shown by both port authorities and maritime regulatory bodies, as well as a number of serious overseas enquiries received in respect of our own system, we feel certain that our optimism for export success with this high-technology Australian product is well placed," he said.

(Port of Melbourne Panorama)

PAF Commissions 1st Container Terminal

The Ports Authority of Fiji (PAF) commissioned its first ever container terminal to be located outside the port on Friday 2 February 1990. The container terminal which is situated next to the mouth of the Tamavua River, opposite the old Suva Cemetery is named after the Turaga Tui Suva, Ratu Weku Rokobili.

The commissioning involved a full Fijian traditional ceremony accorded to the Tui Suva. In his speech, the Tui Suva thanked the Ports Authority of Fiji for the kind gesture towards him and his people in the naming of the terminal after him. He said that it was the first time that an area in the Suva City had been named after him or any of his ancestors as they (the people of Suvavou) are the traditional owners of the site on which the Suva City and the Terminal are located.

In welcoming the Tui Suva, PAF Chairman, Mr. Gerald Barrack, said that the upgrading of the Port of Suva in 1963 was intended to meet the requirements of conventional cargo vessels, which because of their slow discharge and load rates tended to stay alongside for several days to discharge breakbulk and palletised cargoes. With the advent of containerisation, the port had to be upgraded in the 80s to cater for the large influx of containers.

This upgrading programme involved strengthening of the wharf structures, the provision of heavy cargo handling equipment and the establishment of the Authority's first container yard within the port area to handle the large volume of containers which had become the order of the day.

The Chairman added that it was considered at the time that the upgrading programme and the facilities provided would be sufficient to meet shipping demands up to the year 2000. Mr. Barrack said that the container increase since the early eighties has been substantial. For the last 6 years, containerised cargo tonnage has increased from 173,000 tonnes in 1984 to 354,000 tonnes in 1984 to 354,000 tonnes in 1989, a growth of 105%. In terms of units over the same period, there was an increase of 5,910 TEUs — a growth of 54%.

This huge increase in container traffic over such a short period far exceeded expectations when the Suva Port Project was planned, with the result that the Port of Suva has reached saturation point 10 years earlier than originally anticipated.

Mr. Barrack also referred to a number of Port Studies that have identified the particular site as the most suitable location for a container terminal.

He added that the site is well sheltered, it is located close to the city and has potential for expansion.

It was for these reasons, he said, that PAF had taken the opportunity to acquire the land and convert it into a container yard to cater for the overflow from the Kings Wharf.

He added that as demand increases, additional facilities for devanning and storage of containers and possibly the storage of other types of cargo will be made available by providing the necessary infrastructure on land to be further reclaimed.

In closing, Mr. Barrack said that this development would not have been possible without the co-operation of various Government Departments and Municipal Agencies and he acknowledged their assistance.

He also, on behalf of PAF, acknowledged the support, goodwill and assistance received from the Turaga 'Tui Suva,' Ratu Weku Rokobili and the people of Suvavou. The Chairman assured the 'Tui Suva' that PAF will honour all its obligations and it was the Authority's wish that this cordial relationship established will form the basis of an understanding that will enhance the development of the Port of Suva and that the Terminal will be a living testimony to the Tui Suva's far-sightedness.

The Container Terminal will for the time being be used for storing only empty containers, but there are plans for the expansion and further development to enable it to cater for the stuffing and unstuffing of containers and for other cargo operations.

(WAVU)

Port Klang Twins With Port of Brisbane

Port Klang has established sister-port affiliation with the port of Brisbane. This is the first such affiliation for both ports.

A six-man KPA delegation was in Brisbane to sign the agreement on 4 December.

In a joint statement, the two port authorities said that the sister-port affiliation will enhance mutual co-operation and contribute to the prosperity of each other's port through technical and business exchanges. They will consult with each other on port planning, development, construction and operation topics of common interest and also the possibility of personnel exchanges.

While in Brisbane, the KPA delegation met with officials of the Australian Wheat Board. They later visited Sydney where they met with the Australian Timber Importers Federation and P & O (Australia); and Melbourne, for talks with the Melbourne Port Authority and the Australian National Line.

Direct trade between Port Klang and Australian ports totalled 1.5 million tonnes last year. Australia is Port Klang's third biggest trading partner after Singapore and Japan.

(Port Klang)

Wellington: Statement Of Corporate Intent

Preamble:

This statement is presented in compliance with Section 9 of the Port Companies Act 1988. The primary objectives of the company in operating as a successful business shall be:

- 1. To provide a range and level of services and facilities with reliability to all port users sufficient to meet their various needs and requirements.
- 2. To provide those services and facilities in a cost effective manner

at competitive prices so as to achieve adequate profitability and a responsible rate of return on investment.

3. To be a good employer by operating personnel policies which contain provisions for motivation, training, fair treatment and reward; in a safe and satisfying environment which provides the opportunity for individual employees to enhance their abilities.

To complement, but no override the Primary Objectives, the specific objectives of the company shall be:

- 1. To optimise the effective use of all resources.
- 2. To develop and maintain services and facilities at levels consistent with good commercial practice and in accord with the company's financial objectives.
- 3. To have pricing policies reflecting the cost and worth of services and which not only retain existing market share but encourage new business opportunities.
- 4. To expand activities into new business areas complementary to

port activities.

- 5. To facilitate the movement of cargo by integrating the services of the company with other participants in the transport chain to provide a more effective total service and endeavour to reduce the overall real cost of using the Port of Wellington.
- 6. To foster a highly motivated and efficient management and workforce by operating personnel and industrial relations policies which encompass fairness, equality, impartiality, safety, opportunity, reliability, productivity and reward.
- 7. To seek the integration of all waterfront labour.
- 8. To operate the port as a good corporate citizen offering maximum co-operation to other harbour users and the community at large.
- 9. To utilise the resources of the company in collaboration with other regional enterprise to foster and develop commercial activity in the region serviced by the port.
- 10. To be proactive and committed



to maximum levels of achievement, excellence and quality in all activities and undertakings.

Nature and Scope of Activity

- 1. Provide cost effective pilotage, towage and berthage services to promote safe, timely and efficient ship movements in accordance with regulatory and customer requirements.
- 2. Provide cost effective cargo handling equipment and operations to ensure that sufficient equipment and services are available for port users and that the level of performance meets customer requirements.
- 3. Provide and maintain wharves, sheds, buildings and open stacking areas for commercial port purposes.
- Provide a ship's garbage collection service and jointly operate an incineration service in accordance with regulatory requirements.
- 5. Provide and maintain a port security system.
- 6. Provide and maintain utilities for ships and port users.
- 7. Provide security at tanker terminals and oversee operations to ensure procedures are in accordance with regulatory and industry requirements.
- 8. Establish and implement efficient and reliable emergency plans and procedures for the company in accordance with safety standards and recognised practices together with the necessary staff training.
- 9. Provide on a contractual basis services required by the shareholders and Lambton Harbour Management Limited.
- 10. Provide such other services and activities as may be deemed desirable in accordance with Objective 4.

Debt Securities

The ratio of debt securities should not exceed 66% of Equity.

Accounting Policies:

The detailed accounting policies will be consistent with the legal requirements of the Companies Act 1955, generally accepted accounting principles, and the N.Z. Society of Accountants Statement of Standard Accounting Practice (SSAP's) modified as necessary for the circumstances of the company.

Performance Targets:

The following are financial and non financial performance targets for the years ended September 1990, 1991 and 1992.

Indicator:

indicator.		00/00	30/31	01/02
1.	Net Profit (before tax)	\$5.0M	\$5.6M	\$6.2 M
2.	Net Profit (after tax)	\$5.0M	\$5.6M	\$6.2 M
3.	Ratio of net profit to gross revenue	16.4 %	18.2 %	19.4 %
4.	Return on total assets*	9.1 %	8.5 %	8.5 %
5.	Return on equity**	8.9 %	9.4 %	9.9 %
6.	Total container movements (TEU's)	81,110	85,000	88,000
7.	Average port costs per TEU***	\$335	\$335	\$330
8.	Total manifest tonnage	5.8M	5.9M	6.0 M
9.	Gross revenue per employee#	\$143,000	\$145,000	\$151,000
10.	Man days lost through port	1.0	0.8	0.8
	related accidents##			
11.	Rate of work (TEU's per gross crane hour) +	20	21	21
12.	Ship minutes in port per TEU exchanged + +	3.9 mins	3.8 mins	3.8 mins

- Note 1: Pricing Net Profit before tax reflects the continued policy of no price increase for the period under review.
- Note 2: Trade 1989/90 year reflects a downturn in exports of meat and wool.
 - Return on total assets (before revaluations) is the net profit before interest and tax divided by the average total assets.
- Return on equity (before revaluations) is the net profit after tax divided by the average equity.
 Average cost per TEU from wharf gates to pilotage limit (or vice versa) for a loaded dry goods container (combined total charges of Port of Wellington Limited and Container Terminals Limited).
 - Employee numbers 213 (as at year end).
- ## Man days per employee per annum.
- + The rate of work is calculated from the total time when ships are located at a working berth and the labour could normally have been available to work. Interruptions to container operations resulting from industrial stoppages, weather or the handling of break bulk cargo are excluded.
- + + Ship minutes in Port is the time from the ship's arrival to the time the ship departed including any time awaiting berth. Delays outside the terminal operators control are excluded.

Distribution of Profits to Shareholders:

Policy on proportioning net profits to be distributed to shareholders after deductions for taxes and interest will be made by the Board of the company from time to time according to future circumstances as they may exist and the successful achievements of the Objectives of the company.

The expectation is that the dividend will not exceed 40% of after tax earnings.

Information to Be Reported

1. The company will maintain regular reporting on the implementation of policies to the shareholders in accordwill include:

- review of operations

ance with statutory requirements and

of each financial year produce an An-

(a) Within three months after the end

- Statement of accounting policies

- Audited consolidated financial

Report from the Directors which

00/01

01/02

statements for the year

- Explanatory notes thereon

in particular will:

90/00

nual Report comprising:

- a summary of achievements measured against appropriate performance targets
- comment on the outlook for the next period
- the maximum dividend (if any) recommended

(b) Within two months of the end of the first half of each financial year, a half yearly report comprising:

- An abridged, unaudited statement of the financial position with explanatory notes
- A brief report from the Directors on the company's operations for the half year and the outlook for

the second half year

(c) ithin one month provide the shareholders with quarterly trading statistics and a commentary on trade and such other information as may be agreed between the Shareholders and the port company.

Procedures for Acquisition of Shares:

The company will only invest in the shares of another business when the shares acquired are considered by the directors to bring added value to the business of the company or will further the objectives set out herein of the business of the Company.

Compensatory Activities:

The company will seek compensation by agreement from the Wellington Regional Council and/or the Manawatu-Wanganui Regional Council or the appropriate local authority for:

(a) Marine pollution control service; (b) Any other statutory function, duty or power which they may wish the port company to carry out on their behalf and which nvolve the supply of goods or services.

Value of Shareholder Investment:

The value of shareholders' funds in the company as at 1 October 1989 is \$53,968,000.

A reassessment of the estimated valuation of the shareholders investment in the company will be made as required by a directors valuation.

> (Annual Report 1989: Port of Wellington Limited)

PSA to Further Expand Tanjong Pagar Terminal

By Tan Ai Lan Secretariat, PSA

In 1989, Tanjong Pagar Terminal (TPT) experienced a high growth rate of 27% in container throughput, handling a total of 4.05 million TEUs. In order to cope with the anticipated growth in container traffic over the next few years, the Port of Singapore Authority (PSA) will spend another \$336.76 million to further expand the capacity at TPT. This includes both construction works and the purchase of container handling equipment.

Three conventional berths (K16-

K18) at Keppel Wharves will be converted into two container feeder berths. Another container feeder berth will be created by decking the entrance to Empire Dock.

The remaining part of the Empire Dock will be reclaimed and developed with the surrounding areas into a container stacking yard with about 6,500 ground slots. This development will bring the total number of ground slots at TPT to 30,000.

Some 310 power points for refrigerated containers will be provided at the reefer yards D and D1 by increasing the stacking of such containers from two-high to three-high with the construction of permanent steel platforms. Further, the reefer yard D2 will be converted from straddle-carrier to transtainer operations. This will provide a reefer yard of 300 power points and an additional 680 ground slots for other containers. Moreover, a chassis-holding area will be created at Gate 1 for prime movers and chassis. These developments cost \$87 million.

The capacity of TPT will also be expanded through the installation of more container handling equipment. Ten quay cranes together with supporting equipment comprising 44 yard gantry cranes (including some for stacking empty containers up to nine-high), 98 prime movers, 63 chassis and 124 UHF sets will be purchased. With more cranes, the direct transfer of containers between mother and feeder vessels can be carried out simultaneously to provide faster service to customers. The total cost of these equipment is \$240 million.

Additional gate facilities for container traffic will also be developed. A new gate will be constructed at the junction of Kampong Bahru Road and Keppel Road, catering for traffic using these two roads. This new facility will have 7 in-lanes and 7 out-lanes to cater for both TPT and the new Brani Terminal at their fullest capacity.

The new gate will use closed-circuit television and the latest high-tech equipment such as transponder readers. It will be able to service a vehicle in half the existing time, i.e. in about one minute. The staff of the Customs & Excise Department and PSA will be housed in the same cabin so that vehicles can be checked and cleared at one single point instead of the present two separate points.

PSA will provide holding areas with about 106 chassis parking lots to serve as a buffer for chassis arriving before their scheduled time of shipment or delivery. To encourage freight forwarders to take delivery during the third shift, these holding areas will also be used as a temporary park for chassis with containers during the night shift. A parking fee will be charged for the use of the holding areas. The development cost of this new gate for container traffic is estimated at \$8.83 million.

Pending the completion of this new gate, the existing Gate 1 will be expanded from two lanes to four, and Gate 4 will be re-opened with two lanes, weighbridges, closed circuit TV and a transponder system for tracking the movement of tractors and trailers. The total cost of this upgrading is estimated at \$930,000.

With these additional facilities, TPT will have adequate container handling capacity up to 1992, when the first berth at Brani Terminal becomes operational. These developments will enable PSA to increase its productivity and efficiency. Ultimately, savings achieved will be passed back to the customers. (Port View)

Singapore Cruise Centre To Make Debut in '91

By John D'Cruz

Passenger Operations Section PSA

The Port of Singapore Authority (PSA) has invested S\$40 million to develop the Singapore Cruise Centre (SCC) at the World Trade Centre (WTC). Dredging works for the SCC started in Dec. 89 and were completed in the same month. Piling works for the wharf apron are expected to begin in Feb. 90. The SCC is scheduled to be completed by 1991.

An L-shaped finger pier will extend from the existing WTC Building and provide two berths of 245 metres and 160 metres in length for passenger liners. The draft will be 10 metres. An additional reserve berth will be made available alongside the public waterfront promenade for smaller cruise vessels of 150 metres length. Four other berths will be provided for domestic ferries and harbour cruise vessels to Sentosa and the Southern Islands.



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