

•Consolidation in the Maritime Industry and its Effects on North American Trade: A US East Coast Case Study •INMEX'99,

International Maritime Expo and Conference in Goa, India in October Vancouver Port Poeuses or •Kenya Ports Authority Squarely Facing Y2K •Japanese Ports: Y2K Compliance Measures



Join us in IAPH's endeavours to pursue World Peace Through World Trade World Trade Through World Ports

IAPH supports all efforts to prevent the illegal trafficking of drugs!

Drug trafficking through seaports is a global problem requiring vigilance and the co-operation of the world's ports community.

The world's ports must accept their responsibility to enhance security measures and improve communications with the parties concerned by working closely together so as to prevent the illegal movement of drugs through ports.

The *International Association of Ports and Harbors* (IAPH) fully supports the efforts and initiatives of the World Customs Organization (WCO) in their fight against the illegal trafficking of drugs through ports.



IAPH will meet in Montreal, Canada from 19 to 26 May 2001 at its 22nd World Ports Conference

Conference Theme: **"2001, A Maritime Odyssey - 2001, l'odyssée maritime"** Conference Host: **Montreal Port Authority**

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Ports Harbors

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HE port of Kitakyushu is the closest of all the Japanese ports to other Asian countries. Furthermore, the advantage of first-class domestic transportation (multi-mode of air, rail, highway, and long distance ferry lines) makes the Port of Kitakyushu an important port of trade between Japan and the rest of Asia as an "Asian Gateway". Related article on page 34.

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IAPH ANDUNCEMENTS AND NEWS

President Taddeo Promotes A Wider Role Of IAPH

HE IAPH Head Office received a copy of an article which was recently published in a Malaysian newspaper from the office of Mr. Dominic J. Taddeo (Montreal), President of IAPH. The Star Maritime (a daily newspaper with 250,000 copies printed and circulated daily and a readership for one million) inter-

viewed our President and the article headlined "IAPH takes stock of future challenges" appeared in its July 12th edition.

President Taddeo outlined the background of IAPH and stressed his plans for the Association to play a wider role and become the "United Ports of the World". The reporter writes on his interview with President Taddeo as follows:

Providing extensive infrastructures in a timely fashion in the context of fierce competition are among the many challenges the world's ports will have to face in the new millennium.

Other pressures include:

- Increasing environmental concerns and regulations;
- Integrating developing technologies to reduce costs and improve productivity;
- Enhancing ports' roles as facilatators in order to bring about consensus among the various players impacting on the performance of their gateways;
- Dealing with increasing business concentration in the number of shipping lines, railways and trucking companies; and
- Competing land use for port property.

The article also refers to what



President Taddeo said when asked about some of the main tasks of ports in the year 2000 and beyond. In order to respond to the needs of IAPH members, he said the Association had created the IAPH 2000 Task Force. He added that the mandate of the Task Force was to review, analyze and make proper rec-

ommendations on the future of the Association.

The report of the final recommendation was presented at the recently concluded Conference held in KL and was unanimously approved by the members.

"Firstly, we have updated our mission and objectives in order to answer the needs of our members," said Mr. Taddeo, who is the President and CEO of the Port of Montreal Authority.

He said the Association had streamlined the Executive Committee to 22 members for greater efficiency and created two new categories of committees. They are the Sustainment & Growth Group of Committees and the Long Range Planning/Review Committee.

"In my opinion, these changes were required to help the Association become more proactive and be in a better position to tackle the challenges of the millennium," said Mr. Taddeo.

According to Mr. Taddeo, all ports will continue to produce their own strategic plans based on their particular strengths and weaknesses, the markets they cater to and their own regional realities. He said there would always be competition among shipping lines and land carriers servicing the various ports. Ports themselves would continue to cooperate by sharing information and working together on issues of common concern, he added.

Asked about the building of bigger and bigger container vessels, Mr. Taddeo said vessel size was only one factor influencing the overall cost of transportation in door-to-door service. In fact, he said many specialists would argue that the cost of ocean transportation represents less than 30% of the total door-to-door cost.

"Bigger vessels require huge investments in land areas, new terminal equipment and inland transportation capabilities," he continued. "There will always be niche operators in the 2,500 to 4,000 TEU range capitalizing on geographic location, good access to inland markets and effective and efficient productivity on the terminals."

In summary, he said there was no doubt that port players would see bigger vessels being built, but these would not ply the water on all trade lanes.

On competition, he was of the opinion that, in a fiercely competitive environment, fewer shipping lines also competing on the range of services they provide would increasingly rely on ports capable of providing a timely information and seamless interface between vessels and land carriers while acting in cooperation with other service suppliers to guarantee reliability.

On Y2K compliance, he said that many, if not most of the major ports, are keeping pace with the modern communication technology being witnessed in the last few years. In fact, he said ports already exchanged information with clients through EDI, the electronic systems such as Internet, outlook (e-mail) and other methods, including electronic mapping of channels.

Revealing his plans for the Association, Mr. Taddeo stated that, firstly, IAPH wanted to enhance communications, both internal and external, to members, stakeholders and the news media worldwide.

"The importance of ports to world trade is a message that must remain front and center so that all facets of society can better understand and appreciate the role that we play in the global economy", Mr. Taddeo said in concluding the interview of the *Star Maritime*.

the top officials

at the Port of

Long Beach have

been and still are

contributing to

the development

Executive. the

Port of Napier,

Garth

Chief

of IAPH.

Mr.

Cowie.

Finance Committee Chair Changes: Snodgrass Succeeds Murchison

INANCE Committee Chairman Mr. George Murchison has informed President Taddeo, with copies to the Vice-Presidents and Secretary General, of his



George Murchison

imminent resignation as Commissioner of the Port of Long Beach and that he should therefore no longer serve as the Chairman of the IAPH Finance Committee, on which he has served since the London Conference. Mr. Ron Snodgrass, Chief Executive, Westgate Transport Ltd., Taranaki, New Zealand, who is the Vice Chairman of the Committee, was officially chosen to succeed Mr. Murchison as Committee Chairman after the matter had been considered by the officers concerned.

President Taddeo, hearing the news concerning Mr. Murchison's resignation, wrote to Her Worship the Mayor of Long Beach recalling Mr. Murchison's contribution to IAPH and how consistently



Ronald Snodgrass

and the newlyelected IAPH Exco member from N.Z., in his letter addressed to President Taddeo, has fully endorsed the appointment of Mr. Snodgrass. He says that it is at difficult times like these that the true worth of the Vice Chairman's role in our Committee structure is fully appreciated, as the Vice Chairman is able to provide on-going continuity and stability as regards the crucial financial aspect of the Association's affairs and to continue to work with the Secretariat. Mr. Cowie further comments that he is sure from his personal knowledge that Mr. Snodgrass is appropriately qualified for the position to take on the responsibilities and workload.

IAPH Sponsors 2 Trainees to Participate in IMO Course

RIOR to the KL Conference in May this year, IAPH had been asked bv the French Government via Mr. A.J. Smith, the then IAPH Liaison Officer with the IMO, to sponsor a few trainees to participate in the Advanced Course on Port Operations and Management to be organized by IPER in Le Havre from 6 September to 8 October 1999, hosted by the French Government and sponsored by the IMO. This is a course which has been held on an annual basis since 1987, hosted by the French Government with the IMO sponsoring each course.

Mr. Goon Kok Loon (Singapore), Chairman of the IAPH Human

Resources Development Committee, received the request from the French Government to this effect. The Chairman is responsible for making decisions to award IAPH bursaries to qualified applicants to participate in training courses organized by various training institutions, agreed that two qualified applicants should be sponsored and asked the Secretary General to proceed on condition that IAPH sponsorship should be made available to participants from ports in the least developed countries, although IAPH would leave the selection of the qualified participants to the organizer of the course. Mr. Goon also included his recommendation to this end in his report to the KL Conference, which unanimously approved the proposed sponsorship.

The IAPH Head Office has arranged the remittance of the course and other related fees to IPER, the organizer. Although the provision of a bursary to a qualified applicant is normally for a maximum US\$3,500 per member port from developing countries within a twoyear period and excluding air fares, this time an exceptional arrangement has been made so as to cover the necessary fees for participation in the IMO course, including air fares, accommodation and related expenses.

The names of the recipients as announced by IPER were:

•Araia TSEGAL, ERITREA

•Wheatonia Dixon BARNES, LIBERIA

IAPH reminded the organizer to have trainees submit their reports after the seminar in October for publication in this journal.

DTF Chair, Scientific Advisor Report on LS/SG22 Meeting

N 18 June 1999, Dr. Geraldine Knatz (Long Beach), Chairperson of the IAPH Dredging Task Force, e-mailed the IAPH Head Office a report on the 22nd meeting of the London Convention 1972 Scientific Group (LS/SG22) which had been held in the IMO's Headquarters in London from 10 to 14 May 1999. According to the report, Dr. Richard Peddicord, who serves on the IAPH DTF as Scientific Advisor, also took part in the meeting.

The report, which is reproduced in the following pages, identifies key issues for IAPH in connection with the agenda of the meeting and concludes by saying that IAPH is respected as a valuable contributor to the work of the Scientific Group and thus it should encourage member ports to urge their national delegations to the LC and SG to support its positions in this regard. **ACTIVITIES REPORT**

London Convention Scientific Group 22nd Meeting

May	10	-14,	199	9,	Lon	don,	UK
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By Geraldine Knatz, Chairman Richard Peddicord, Scientific Advisor Dredging Task Force International Association of Ports and Harbors

HE twenty-second meeting of the London Convention 1972 Scientific Group (LC/SG 22) was held at International Maritime Organization headquarters, London, UK, on May



10-14, 1999. The meeting was attended by 52 representatives and alternates from 20 Contracting Parties, 3 observers from 2 non-contracting parties, and 13 observers from 6 non-governmental organizations (NGOs). The NGO representatives included Dr. Geraldine Knatz, Chairman, and Dr. Richard Peddicord-Scientific Advisor, of the International Association of Ports and Harbors (IAPH) Dredging Task Force.

Mr. Manfred Nauke, IMO Deputy Director and Chief of the Office for the London Convention 1972, announced his retirement to take place later this year. No replacement has yet been named.

The major agenda item was development of waste-specific assessment guidance for assessment of wastes on the "reverse list" other than dredged material (for which the Dredged Material Assessment Framework has already been adopted). Several issues potentially important to the future of dredged material management under the Convention were discussed. This report summarizes the actions of LC/SG 22 relevant to IAPH and their implications.

LC/SG 22 completed work on the following items and agreed to forward them for consideration at the upcoming Consultative Meeting:

- Draft Specific Guidance for Assessment of Organic Material of Natural Origin
- Draft Specific Guidance for Assessment of Sewage Sludge
- Draft Specific Guidance for Assessment of Platforms or Other Man-made

 KEY ISSUES FOR IAPH
 1.1 LC/SG Terms of Reference Since the last review of

the Terms of Reference (TOR) for the LC/SG in

Structures at Sea

1984, major changes in the LC have included adoption of Annexes I and II prohibiting disposal at sea of several categories of material, and adoption of the 1996 Protocol to the Convention. In light of the changes, the TOR were reviewed by LC/SG 22 to assure their appropriateness to the current LC and Protocol. The LC/SG 22 recommended the Consultative Meeting adopt revised TOR for the SG. In essence, the revisions shorten the TOR and make them more encompassing, and add item 8 concerning SG contributions to the Technical Cooperation and Assistance Program. In addition, a perspective statement has been added to the TOR stating that SG activities should meet the needs of all existing and prospective Contracting Parties recognizing their social, cultural and economic diversity.

1.2 Review of the Dredged Material Assessment Framework (DMAF)

The DMAF was adopted by the Consultative Meeting in Resolution LC.52 (18) with the recognition that it would need to be re-formatted for consistency with the other waste-specific guidances when they were developed. The United States delegation offered to submit a draft re-formatting for consideration at LC/SG 23. The Chairman of the SG invited IAPH, the International Navigation Association(PIANC) and the Central Dredging Association (CEDA) to support the U.S. efforts and prepare material such as reference lists and case studies for consideration in conjunction with the reformatted DMAF.

1.3 Placement of Matter at Sea for Purposes Other than Mere Disposal

Uncertainties have arisen about the "placement of matter at sea for purposes other than the mere disposal thereof" under the LC. The Canadian delegation offered to develop draft guidance on this subject for consideration by LC/SG 23. IAPH volunteered to assist in the development of this draft guidance.

IAPH should watch this issue very carefully. "Placement at sea for purposes other than mere disposal" could (and likely will) be interpreted by some to include a variety of aquatic beneficial uses of dredged material, including berns for beach nourishment and shoreline protection, aquatic habitat development, etc. If development of guidance on this subject is not watched carefully, it could result in a variety of unwarranted constraints on appropriate and environmentally sound placement of dredged material in the oceans.

1.4 Workshop on the Prevention of Marine Pollution in the Asia-Pacific Region

The IMO Secretariat presented a status report on the development of the Waste Assessment Guidance Training Set for providing access to the experience of the Contracting Parties in regulating their sea disposal practices. The SG recommended extensive re-writing and re-structuring to enhance the utility of the training Set as a teaching and training tool. However, its basis value was recognized, and it will be used in preparation for the Workshop on the Prevention of Marine Pollution in the Asia-Pacific Region to be held in Townsville, Australia in conjunction with LC/SG 23 in May 2000. The IAPH Science Advisor participated in an informal meeting with the Australian delegation for scoping and planning the workshop. IAPH may have a role in workshop activities. Immediately prior to the Workshop, the Australian government will hold a two-day meeting for the Australian ports on environmental management of dredged material in relation to the DMAF. IAPH is assisting in planning this meeting, and will be a participant.

1.5 Tributyl Tin

Tributyl tin (TBT) is a powerful biocide that is the principal active ingredient in various antifouling paint formulations. Various environmental groups advocate stringent restrictions on its use. TBT is increasingly being mentioned at the SG in connection with dredged material. TBT appears on the LC/SG Future Work Program in Item 4: Monitoring-antifouling paint compounds. The draft of the Future Work Program included the words "in dredged material" but they were dropped to broaden the scope of the topic. It is clear that TBT in dredged material will receive increasing attention. IAPH should be alert that this does not result in negative implications for dredged material management under the LC.

2. LC/SG FUTURE WORK PROGRAM

Activities on the Future Work Program for LC/SG 23 of particular interest to IAPH include:

- Waste-specific assessment guidance. As guidance is developed for the remaining categories of waste, it will be important to guard against language or concepts that would be contrary to IAPH interests if interjected into the Dredged Material Assessment Framework in the future.
- Risk assessment procedures in waste management. Quantitative risk assessment is being touted as a new basis for environmental evaluations. While the approach has merit, it can easily be misused, and distinct advantages for ports over the present approach to environmental assessment have yet to be demonstrated.
- Underlying principles for describing action levels. Action levels will play an important role in dredged material regulation under the LC. If not established on a sound basis and implemented properly, they are likely to be expensive, unnecessarily restrictive and of little environmental benefit. The Scientific Advisor, Dr. Richard Peddicord, represented IAPH in a by-invitation-only IOC/UNEP/IMO GIPME Workshop on Marine Sediment Quality Guidelines held in conjunction with LC/SG 20. We are monitoring the ongoing activities of the group, since LC/SG 23 may well be asked to endorse the final report of this Workshop as the SG guidance on action levels.
- Placement for purposes other than mere disposal. This issue, discussed in 1.3 above, has potentially large implications for dredged material management under the LC.
- Antifouling paint compounds. This issue, discussed in 1.5 above, has the potential to affect dredged material management under the LC.
- Technical cooperation. This offers IAPH the opportunity to have a positive influence on the attitude of developing

countries toward their ports through participation in environmental training activities.

3. FUTURE IAPH ACTIVITIES *3.1 Waste-Specific Guidance*

As guidance is developed for other listed materials, IAPH should remain vigilant to avoid LC/SG acceptance of language or concepts that could later be leveraged into the dredged material guidance to its detriment.

3.2 Action Levels

To help assure that action level guidance is flexible, considers bioavailability, allows effects-based evaluations (e.g., direct toxicity tests of the dredged material in question), and provides for management of material to make ocean dumping acceptable, IAPH should monitor the completion of the final report of the IMO/UNEP GIPME Workshop on Marine Sediment Quality Guidelines.

3.3 IAPH Scientific Papers

IAPH should identify opportunities to maintain its status as a respected contributor to the SG, and to enhance the image of the ports as leaders in environmental protection. The future work program provides potential opportunities to submit papers demonstrating port leadership in:

- Impact hypotheses Description of use of impact hypotheses in dredged material disposal site selection or monitoring
- Waste management options description of theory and practice of evaluating dredged material placement options, including beneficial uses, to identify the environmentally preferable alternative consistent with the dredged material assessment guidance
- Use of Geographical Information Systems (GIS) in dredged material management
- Application of quantitative risk assessment in dredged material management

4. CONCLUSIONS

- IAPH is respected as a valuable contributor to the work of the SG. This status should be carefully maintained because dredged material is by far the largest class of material covered by the LC, and thus will always be a subject of SG interest.
- IAPH should encourage member ports to urge their national delegations to the LC and SG to support IAPH positions, especially on avoiding port responsibility for upstream control of pollution sources for dredged material.
- Action levels and placement for pur-

poses other than mere disposal, and perhaps TBT, are the scientific topics with the greatest potential to affect IAPH interests in the near future. IAPH should act to protect the interests of ports as these topics are considered by the LC/SG.

1999 Tonnage Survey: Deadline Sept. 30

NCE every two years or every conference year, a survey is conducted of all Regular Members of IAPH for their updated tonnage figures, which should form the basis of the coming two years' dues assessment by the Secretary General.

A circular from the Secretary General dated 30 July 1999 and a survey form have been sent to all Regular Members from Tokyo asking them to file with the Secretary General a report of the latest one-year period following the last such report, which was conducted in July 1997. Each Regular Member has been asked to notify the Secretary General of the number of dues units for subscription under the tonnage based dues formula of IAPH. The deadline for receipt has been set for 30 September 1999 so that the data collected can be used when the Secretary General's office issues invoices for the 2000 dues to all members in late December this year, and likewise for the 2001 dues towards the end of next year. Members cooperation in returning the completed forms will be highly appreciated by the Secretary General.

Concerning the biennial tonnage report and notification of the units to be subscribed by each Regular Member to the Secretary General, Section 5 of the By-Laws provides:

Each Regular Member shall file with the Secretary General, on the first day of July in each odd-numbered year commencing with the year 1979*, a report of the tonnage handled during the calendar year immediately preceding the filing of such report. (*Note: The tonnage based dues formula has been applied by the Association since 1980 following the decision made at the 11th IAPH Conference held in Deauville in France, hosted by the Port of Le Havre Authority in May 1979. Before that Regular Members had paid US\$250 per unit as their annual dues.)

IAPH/UNCTAD Monograph No.15 Sent to Members

ONOGRAPH No.15, entitled "Quality Management: The Port of Nantes/Saint-Nazaire Experience" co-authored by Frédéric Dupin, Operations Director, Alain Tcheng, Port Commandant, Yannick Guillon, Assistant Chief, Technical Facilities Operation, Nantes/Saint-Nazaire Port Authority and Nicolas Terrassier, Director, ISEMAR, Saint-Nazaire, was sent to all IAPH members from the Tokyo Head Office in early August 1999.

Monograph is one of the series being prepared by UNCTAD's Division for Services Infrastructure for Development and Trade Efficiency in collaboration with IAPH's Committee on Human Resources Development, chaired by Goon Kok Loon of PSA Corporation Limited, Singapore. The table of contents of the report is introduced as follows:

Chapter

- I. THE DEVELOPMENT OF QUALITY SCHEMES
 - A. Beginnings of the projects
 - B. Design of the schemes
 - C. Choice of activities
 - D. The question of certification

II. QUALITY MANAGEMENT AT THE AGRI-FOOD TERMINAL

- A. Treatment of incoming vessels a quality charter
- B. The quality of the Agri-Food Terminal technical facilities
- C. Cargo handling

III. ANOTHER ASPECT OF QUALITY -SAFETY AT THE OIL TERMINAL

- A. Use of industrial hazard analysis
- B. Production of safety recommendationsC. Recommendations for vessels calling
- at the oil terminal D. Evaluating the benefits

Annexes

- I. Extract from the Agri-Food Terminal Quality Charter - the Pilots
- II. Standard request form for equipment and facilities
- III. Measuring service quality
- IV. Monitoring the quality of cargo-handling equipment
- V. Specimen analysis of a function -Failure, effects and criticality
- VI. Safety analysis of berthing operations mooring at the Donges 6 and 7 oil terminals

IPD Fund: Status Report

No progress in fund-raising campaign

E regret we must again report that there has been no progress in the fund-raising campaign since the last announcement. To achieve our goal, we still need to raise about 54% of the targeted amount of US\$70,000. Any fresh donations to the Fund will be welcomed by the Secretary General, who is in a position to administer the Fund and make the necessary arrangements for the disbursement of the money if and when he receives instructions to do so from the Chairman of the IAPH Committee on Human Resources Development, who is responsible for making decisions to award IAPH bursaries to qualified applicants for the approved training courses overseas. In the hope of attracting potential donors' attention, we introduce below the list of contributors and the amounts they have donated to the IPD Fund.

List of Contributors to the Special Port Development Technical Assistance Fund

(in the 5th Fund-raising campaign, started July 1997) (As of 30 July 1999 in order of receipt at the Tokyo Head Office)

ORGANIZATION	COUNTRY	(US\$)
Georgia Ports Authority	USA	1,500
Bintulu Port SDN BHD	Malaysia	1,000
Ports of Auckland Ltd.	New Zealand	500
Fremantle Port Authority	Australia	250
Port Services Corporation	Oman	98 5
Associated British Ports	UK	1,000
Nanaimo Harbour Commission	Canada	250
Japan Cargo Handling Mechanization Association	Japan	240
South Carolina State Ports Authority	USA	750
Mauritius Ports Authority	Mauritius	1,000
Overseas Coastal Area Development Institute of Japan	Japan	1,000
Port of Rotterdam	Netherlands	1,000
Port Authority of the Cayman Islands	Cayman Islands	500
Kuwait Oil Company (KSC)	Kuwait	750
Port of Copenhagen	Denmark	1,000
Saeki Kensetsu Kogyo Co. Ltd.	Japan	235
Marine Department, Hong Kong	China	500
Port of Montreal	Canada	1,000
Port Authority of Thailand	Thailand	100
Tanzania Harbours Authority	Tanzania	1,000
Port of Kobe	Japan	3,000
Japan Academic Society for Port Affairs	Japan	237
Sydney Ports Corporation	Australia	500
World Cargo News	UK	100
Nagoya Port Authority	Japan	3,000
Administracao do Porto de Sines	Portugal	500
Maldives Ports Authority	Maldives	100
Port Autonome du Havre	France	1,000
Indonesia Port Corporation II	Indonesia	500
Fraser Port Authority	Canada	250
Kobe Port Terminal Corporation	Japan	500
Canaveral Port Authority	USA	500
Sabah Ports Authority	Malaysia	261
Irish Ports Association	Ireland	500
Portnet	South Africa	1,000
Port of Amsterdam	Netherlands	500
Port Authority of New York & New Jersey	USA	1,000
Port of Kawasaki	Japan	983
Port of Houston Authority	USA	1,500
Empresa Nacional de Administracao dos Ports	Cape Verde	250
Dr. Susumu Maeda	Japan	100
World Cargo News	UK	100

Total in US\$: 30,941

IAPH Bursary Recipient

R. Jean Francois Carver, Assistant Operations Manager, Mauritius Freeport Authority, Mauritius, was awarded an IAPH Bursary by Mr. Goon Kok-Loon (Deputy Group President, PSA Corporation Ltd.), Chairman of the IAPH Committee, on Human Resources Development on 4 August 1999. He was to participate in the "Handling, Transportation and Storage of Dangerous Goods" to be organized by PSA Institute from 15 to 26 November 1999.

We will be able to publish the recipient's report on his paricipation in the above course after the November course in Singapore in an issue of this journal and we wish him asuccessful and fruitful training in Singapore.

TT Club Publication on Y2K Sent to IAPH Members

T Club, an Associate Member of IAPH, one of the great supporters of the IAPH activities, recently offered that copies of a 47-page document, "Guidelines on Business Continuity for Year 2000 Risks", with the endorsement of IAPH, be made available to all IAPH members.

The proposal was welcomed by IAPH after the matter having been referred to President Taddeo (Montreal) and Second Vice President Struijs (Rotterdam, who also serves as the Head of Y2K Inter-Industry Group. The publication was to be distributed from the Tokyo Head Office to each member of IAPH in early August.

Its contents include:

- 1. About these guidelines
- 2 Risk Management: your essential planned tool
- 3. The Business Continuity Planning process: a summary
- 4. Stage one: Operational contingency planning
- 5. Stage two: Strategic contingency planning
- 6. Stage three: Combining the operational and strategic plans
- 7. Managing the date change transition
- 8. Legal Implications
- 9. Appendices

Note: The booklet will be available electronically on the internet at <u>www.ttclub.com</u> and <u>www.ship2000.com</u>.

Datin O.C. Phang of PKA to Represent IAPH at INMEX'99 in India

APH was invited by the organizer of the INMEX '99, India's first international maritime exhibition and conference which is scheduled for 6 - 10 October 1999 at Panjim, Goa to participate in the event.

On the recommendation of Dr. Jose Paul, Chairman, Mormugao

Port Trust, Mr. Pradeep Deviah, Chairman of the INMEX Secretariat (located in Bangalore, India) wrote to the Tokyo Head Office on 9 July 1999 requesting IAPH to consider participating in and presenting a paper at the Conference in Goa.

The Tokyo Secretariat consulted with Dr. Akio Someya of Nagoya, First Vice President representing the Asia/Oceania region, in line with the recently agreed policy to support such a regional meeting as the one taking place in India. By the end of July, the Head Office had learned from copies of fax communications exchanged between Dr. Someya and Datin O.C. Phang of Klang that she accepted the role of the IAPH representative at the planned Conference in India on behalf of Vice President Someya, who is unfortunately unable to travel to India due to his previous commitment to head Nagoya's port promotional mission to ports in the USA and Central America during that time. Datin O.C. Phang, who is well known among IAPH members as the Chairperson of the 21st IAPH Conference in Kuala Lumpur, Malaysia, held in May this year and as an IAPH Exco member, has reportedly confirmed her willingness to take the opportunity to pursue IAPH's membership campaign efforts in India in her capacity as the newly appointed Chair of the IAPH Membership Committee. We believe that Datin O.C. Phang will be the right person to represent IAPH at the Indian conference and hope that we will be able to report to our readers on the fruitful outcome of her participation in the event and to outline the results of our campaign efforts through a future issue of this journal.

Details of INMEX'99 are introduced later in this issue in the "INTERNATION-AL MARITIME INFORMATION" column, together with those of other planned meetings, for the benefit of IAPH members and readers.

We learn from the Conference secre-



tariat that INMEX '99 is endorsed and supported by India's Ministry of Surface Transport, which oversees numerous ports and shipyards in the country, including Mazagon Docks, Goa Shipyard Limited, Hindustan Ship Yard, Mormugao Port Trust, Cochin

Ship Yard, Visakhapatnam Port Trust, Mangalore Port Trust, the Indian National Shipowners Association and the Container Shipping Lines Association. (Related article on page 24)

Seven Pledge to Sponsor IAPH Publication

ECRETARY General Inoue had asked IAPH members to see if they can become sponsors for the production of the proceedings of the KL Conference held in Malaysia in May this year. In his letter of 25 June 1999, Dr. Inoue thanked all the members for their support and cooperation afforded the Head Office for making the Conference such a successful and worthwhile event. In particular he expressed his appreciation and respect to Datin O.C. Phang, our Conference Chairperson, for her splendid organization and orchestration of the business and social programs of the Conference, ably assisted of course by the Minister of Transport and the other Malaysian authorities and ports as well as PKA's hardworking Organizing Committee team.

As of 30 July the following organizations had pledged to participate in the sponsoring the proceedings.

List of sponsors (as of 30 July 1999)

- I. Nagoya Port Authority, Japan
- 2. Port of Sept-Iles, Canada
- 3. Montreal Port Authority, Canada
- 4. PSA Corporation Limited,
- Singapore
- 5. Port Authority of Thailand, Thailand
- 6. Port Klang Authority, Malaysia
- 7. Klang Container Terminal BHD, Malaysia

IAPH Japan Seminar '99 Reviews the KL Conference

N the afternoon of 27 July, a meeting of Japanese IAPH members was held in a Tokyo conference hall, sponsored by the IAPH Foundation in close cooperation with the IAPH Head Office. The meeting was attended by some 110 people, including many KL Conference participants.

The four-hour meeting was designed to enable those attending to hear reports from people who had participated in the 21st IAPH World Ports Conference held in Kuala Lumpur, Malaysia in May this year.

The speakers included delegates from the Ministry of Transport and the Ports of Kobe, Nagoya, Osaka, Tokyo and Yokohama as well as Mr. Hiroshi Kusaka, who retired as Secretary General at the close of the Conference in Malaysia (and is now an IAPH Honorary Member and Secretary General Emeritus).

They spoke about the issues they had found of particular importance as a result of their participation in the KL Conference. IAPH Deputy Secretary General Kondoh also made a presentation on the KL Conference and on issues which IAPH will have to look at in the coming years.

The gathering was followed by a reception, where the participants enjoyed chatting with their IAPH friends from different ports, maritime and transport businesses from all over Japan.

During the course of the reception, the opportunity was taken to express the deep appreciation of Japanese IAPH members to Mr. Hiroshi Kusaka for his dedicated service and contribution to the development of IAPH in his capacity as Secretary General (1987-1999).

On behalf of the participants, Dr. Akio Someya, Executive Vice President, Nagoya Port Authority and First Vice President of IAPH, and



ne seminar attracts over 100 people.



Speakers: O N. Machida, Chairman of the IAPH Foundation @ M. Hashima, 1st District Ports & Harbors Construction Bureau, MOT @ A. Semba, Osaka Port Terminal Public Corporation @ K. Takami, Port of Tokyo @Y. Nakajima, Port of Yokohama @ N. Yamamoto, Port of Kobe

Mr. Hideo Kayahara, Director General, Japan

Port and Harbor Association and former Exco member from Japan, offered words of thanks to Mr. Kusaka and reminded the participants of Mr. Kusaka's valuable contribution to the development of IAPH and of the highly important role he had played as Secretary General of IAPH, during nu, MDT ③ A. kami, Port of Port of Kobe Through World Trade, World Trade Through World Ports" an 第12回 IAPH日本セミナー



Participants toast for IAPH's prosperity



Pictured during the reception (from left): H.Kayahara, Director General, Japan Port and Harbor Association; A.Someya, Executive Vice-President, Nagoya Port Authority and 1st Vice-President of IAPH; H. Kusaka, Secretary General Emeritus of IAPH; T. Okabe, Honorary Chairman of Japan Port and Harbor Association; Y. Kawashima, Director General, Ports and Harbours Bureau, MOT; and S. Inoue, Secretary General of IAPH

which time he shared with his Japanese colleagues new ideas and knowledge on the various activities of IAPH.

Dr. Satoshi Inoue, new Secretary General of IAPH, presented a letter of thanks to his predecessor and Ms. Yoko Kuriya of the Secretariat presented a bouquet to her former boss on behalf of all her colleagues at the Secretariat and everyone else present.

Mr. Kusaka, in his message of thanks, recounted the support he had received from his predecessors as Secretary General and the successive IAPH officers and members from all over the world as well as his younger colleagues at the IAPH Secretariat.

He added, "It is my belief that, as long as the members of IAPH work closely together without forgetting the motto* which was first coined by the late Mr. Gaku Matsumoto, a founding father and the first Secretary General of IAPH, the Association will be able to continue contributing to the betterment of world ports and the people in port businesses and their communities." Mr. Kusaka wished everyone there all success in their efforts to carry on the work of IAPH and wished the respective ports yet greater prosperity.

Thank you, BPA friends, for supporting the IAPH London Office!

T the Closing Session of the 21st IAPH Conference in Malaysia held on 21 May 1999, Mr. Jean Smagghe, the outgoing President, prior to his farewell address, commended two individuals and one organization with plaques recording Presidential citations for the contributions they had made to the development of IAPH. The organization commended was the British Ports Association (BPA) headed by Mr. David Whitehead, Director, whose office had delegated Mr. Alex J. Smith as IAPH Liaison Officer with IMO and as our European Representative in London.

After the KL Conference, Mr. Smith sent the Tokyo Secretariat a photo taken of Mr. Whitehead and his staff with the plaque presented to the BPA, which Mr. Smith had received on behalf of the BPA in Malaysia and carried to London.

It is with deep gratitude that we introduce the photograph of our BPA friends, who have not only supported Mr. Smith's representation activities but have assisted the Tokyo Head Office members so consistently that everyone



Alex Smith (standing) with Monica Williams, David Whitehead and Betty Redmond at the BPA office

at the Tokyo Secretariat felt very at home whenever they communicated with the BPA. In particular, for Mr. R. Kondoh, who was a frequent visitor to Europe to attend various meetings, dropping into the BPA office and meeting his friends there allowed him a little breathing space during his hectic travel schedules.

On this occasion we at the Tokyo Head Office wish to offer our warm appreciation and gratitude for their kindness and friendships which awaited us always in London. We trust our friendly relations will continue.

Visitors

N 14 July, Mr. Jemal Inaishvili, General Director, Port of Poti, Georgia, who is also President of the Black and Azov Seas Ports Association (BASPA), visited the Head Office, where he was welcomed by Secretary General Inoue and Deputy Secretary General Kondoh. It was the first time for the IAPH Head Office to receive visitors from Georgia in its 44year history. Earlier the same day, Mr.



From left: Mr. Kondoh, Dr. Inoue, Mr. Inaishvili and Mr. Amano

Inaishvili has been the guest of the Port of Yokohama. Mr. Inaishvili impressed the IAPH officials by briefing them on the latest situation concerning his Port which, according to Mr. Inaishvili, has existed since 1858. The BASPA was created on 24 May 1999 at Poti under the auspices of the Black Sea Economic Cooperation (BSEC, Turkey). Mr. Inaishvili was visiting Tokyo on a business mission involving the port development plan at Poti. During his weeklong stay in Tokyo, he visited the Ministry of Foreign Affairs and the Overseas Economic Cooperation

Fund (OECF), an institution devoted to overseas technical cooperation projects. Mr. Inaishvili was accompanied by Mr. Yoshio Amano, Project Manager, Mitsubishi Corporation, which was acting as the coordinator of his visit. Dr. Inoue and Mr. Kondoh took the opportunity to encourage the visitor from Georgia to join IAPH and said that they look forward to the day his or other Georgian ports join IAPH in

'dredging: the facts', Joint Publication by IADC/IAPH/PIANC

booklet, "dredging: the facts", has recently been produced by the IADC (International Association of Dredging Companies) in cooperation with IAPH and PIANC (International Navigation Association.) IAPH participated in the production of this pamphlet and bought a sufficient number of copies of it for distribution among IAPH members. In early August, the Tokyo Secretariat arranged for each IAPH member to receive a copy of this publication by airmail together with the other documents, in whose production IAPH was also involved.

the near future.

On 22 July, a five-member delegation from the Constantza Port Administration, Romania, visited the Head Office, where the party was welcomed by the Secretary General and his staff. The delegation comprised Mr. Mihaita Emil Visoianu, President of the Board of Administration and General Manager (who is an IAPH Exco member); Mr. Gheorghe Moldoveanu, Technical Director; Mr. Tudor Balta, Financial Director; Ms. Carmen Cucuianu, Head of the Contracts Dept., and Mr. Victor Nastase, Business Promoter, Bucharest Representative Office of Sumitomo Corporation. Mr. Masayasu Otsuka, Manager, Industrial & Infrastuctural Project Section No.1, Sumitomo Corporation, Tokyo, accompanied the delegation members. The party was visiting Tokyo on business and reportedly visited the Port of Tokyo and its Container Terminal while in Tokyo.



(Seated from left): Ms. Cucuianu, Mr. Visoianu and Dr. Inoue (Standing from left): Mr. Nastase, Mr. Otsuka, Mr. Kondoh, Mr. Balta, Ms. Takeda and Mr. Moldoveanu.

Obituary

Former Finance Committee Chair Fred Gingell



HE sad news concerning Mr. Fred Gingell reached the Tokyo Head Office on 9 July by e-mail from Fraser Port Authority's Public Affairs officer. According to the Immediate Release from Fraser Port, Mr. Fred Gingell, former Fraser Port Chairman and former Chairman of the IAPH Finance Committee, passed away on 6 July 1999 due to complications arising from cancer. He was 68. Mr. Gingell was a Commissioner of the Fraser River Harbour Commission from 1975 to 1985 and was Chairman between 1985 and 1987. During the mid-1980s he was a Director of IAPH, while at the same time serving as Chairman of the Finance Committee.

Mr. Gingell, who himself was a CPA, contributed to the development of IAPH and especially to the Association's finances, and was a regular participant in the IAPH biennial conferences and Executive Committee meetings.

"He entered provincial politics as a member of British Columbia's legislative assembly in 1991. Mr. Gingell, who was respected for his business acumen, made great contributions to the Fraser Port during his tenure. Yet he was also known for his gentleness and common sense and will be missed by the local marine community", said the communication from Fraser Port's Public Affairs officer.

Mr. R. Kondoh, Deputy Secretary General, who used to work with Mr. Gingell, sent a letter of condolence on behalf of Dr. Inoue, Secretary General, and the other staff members of the Head Office who had experienced working with Mr. Gingell on various occasions such as the biennial conferences and other gatherings.

Membership Notes

New Members

Regular Members

Mumbai Port Trust	[Regular] (India)
Address:	Secretary's Department, Port Bhvan, S.V. Marg
	Mumbai-400 001
Mailing Addressee:	Mr. A.K. Mago, Chairman
Tel:	91-22-261 4321
Fax:	91-22-261 1011
E-mail:	mbpt@giasbm01.vsnl.net.in

Port of Napier Limited [Regular] (New Zealand)

Address:	P.O. Box 947, Napier
Mailing Addressee:	Mr. Garth Cowie, Chief Executive
Tel:	06 834 4400
Fax:	06 834 4408
E-mail:	garthc@portofnapier.co.nz

Associate Member

Horton International	[Class A-3-3] (U.S.A.)
Address:	217 E. Redwood St. #1470, Baltimore, MD21202-3316
Mailing Addressee:	Mr. Tim C. McNamara, Partner & Managing Director
Tel:	410-625-3800
Fax:	410-625-3801
E-mail:	mcnamara@horton-intl.com
Internet:	http://www.horton-intl.com

Changes (the changes involved are underlined)

Nanaimo Port Authority [Regular] (Canada)

(The name of the organization has been changed from Nanaimo Harbour Commission. This status change was enacted under the Canada Marine Act.)

Japan Cargo Handling Mechanization Association [Regular] (Japan)

Address:	<u>Koyo Toranomon Bldg. 4F., 2-17-2, Nishi-Shimbashi</u>
	<u>Minatoku, Tokyo 105-003</u>
Tel:	<u>03-5472-4791</u>
Fax:	03-5472-4790

From the Working Sessions of the KĽ Conference IAPH '99

N the previous issue, the presentations by the respective speakers at the Working Sessions of the 21st IAPH World Ports Conference held in Kuala Lumpur, Malaysia, were introduced in summarized form, except for the keynote address by Malaysia's Prime Minister Dr. Mahathir.

In this issue, we feature the presentations by Desmond Tamaki, Representative in Singapore, the Port Authority of New York and New Jersey, on behalf of Lillian C. Borrone, Director of the Port Commerce Department, in the Conference's Working Session I (which focused on the changing structure within the shipping and port industries), and that by Alfred J. Baird, Director, Maritime Transport Research Unit, Napier University Business School, Edinburgh, Scotland, UK, in Working Session 6 (which focused on advancement in technology and its implications on port operations) respectively, in the OPEN FORUM column.

Consolidation in the Maritime Industry And Its Effects On North American Trade: A U.S. East Coast Case Study

OPEN FORUM

By Desmond C. Tamaki

Regional Director, South and Southeast Asia Singapore Office

on behalf of Lillian Borrone

Director, Port Commerce Dept., The Port Authority of New York and New Jersey

(Presentation made at Working Session 1, the 21st IAPH Conference in KL, Malaysia, 18 May 1999)

ONSOLIDATION, as we all know, has been gathering apace in virtually all industries, not just transportation.

- The need to cut costs and attain operational efficiencies by achieving some sort of synergy has seen the acceleration of mergers. And the need to employ vast sums of capital to cover the investments required by technology has driven independent companies into each other's arms in various forms of alliances. This trend is worldwide, though particularly strong in the U.S. and Europe – witness the cross-border mergers in the telecommunications industry.
- In the U.S., a recent study by Andersen Consulting found that the average U.S. company in the Fortune 500 will derive 25 percent of their revenues from alliances – a figure that doubled over the last five years. So the trend extends to all sectors of the economy. In the shipping industry, as in other areas, improving financial returns is the fundamental driving force behind mergers and alliances – so increasing consolidation is highly likely.

As far the ocean shipping industry is concerned, it is not the overall volume of trade that is affected but its distribution



Lillian C. Borrone



Mr. Tamaki (left) was pictured with the Conference Chair Datin O.C. Phang (center) and Mr. Roy H. Jaeger, a delegate from Amsterdam, at the farewell gala dinner on 21 May in Kuala Lumpur.

among a) ocean carriers and b) ports.

Basic Facts Impacts of Consolidation

"Alliances," especially when disciplined, may be considered de facto mergers of the shipping lines involved. As industry observers have noted, these alliances may "centralize capital to effect technological changes in the shipping industry" – in this case, the building of bigger, deeper-draft vessels.

The trend to larger vessels and to combining in alliances is unstoppable because it is a prime factor in lowering the carriers' operating costs. But it forces ports to invest heavily in channel and berth deepening, and all forms of infrastructure, probably much sooner than otherwise.

This trend is also based on perfect economic logic. The only problem, for ports, is that the bigger the customer, the stronger the clout to obtain port services on the customer's terms.

The concentration of volume handled by a merged corporate shipping entity or by an alliance of carriers magnifies the effect of any action an alliance takes and so increases alliance bargaining power.

As a senior official from Maersk Line's stevedoring/terminal services arm, Universal Maritime Services, stated recently in the Journal of Commerce, "carrier alliances ... are beginning to wield clout in port operations due to the huge cargo volumes they control"

What Are The Consolidated Shipping Entities Involved Here?

Thus, if one line decides to change terminals, or even leave a port altogether, the chances are that it would persuade its alliance partners to do the same (or the alliance may not work, or indeed be doomed). This magnified effect could have awful consequences for an individual terminal operator's business, and indeed for the port itself.

Inter-Port Competition

The effects of such increased bargaining power are all too frequently seen in the port business worldwide. Witness the examples of the battles between Antwerp and Zeebrugge, which in turn

fight the expanding power of Rotterdam; and the competition between Hamburg and Bremerhaven. And on our North American East Coast, witness the struggle between Halifax, Boston, New York, Philadelphia, Norfolk, Charleston, Savannah and Miami – all of which are expanding capacity to meet hoped-for cargo growth.

All this development requires huge capital investment. According to figures published by the U.S. Maritime Administration, ports in the U.S. have invested US\$17 billion over the last 50 years; of this, \$5 billion has been invested in the 1992-1996 time frame; and future investments in the next five-year period (1997-2001) are expected to total \$7 billion in channel deepening and infrastructure projects.

My port, the Port of New York and New Jersey, believes that up to \$7 billion will be needed through 2040 to develop the full infrastructure of a thoroughly modern port (including channel deepening, terminal expansion and creation, and rail and road access) to take the largest containerships and their huge volumes of cargo. We are, and intend to continue to be, the "gateway to the U.S."

The danger is that immobile ports invest huge sums to accommodate very mobile alliances that may well not invest anything. Ports are, therefore, extremely vulnerable to the changing fortunes and desires of both large shipping lines and alliances. And if one port tries to reap a reasonable return for such investments, while a close competitor does not, then that port is at an immediate market disadvantage.

As you may know, ports in the U.S. are generally a public enterprise, owned by agencies of state governments and either operated by them or by private operators through, for example, terminal leases. (In fact, most are landlord ports, as is the port of N.Y./N.J.) As such, they are expected to play a role in the economic development of their region – a role that has been of major importance to my port.

This is where problems may arise. For some states subsidize their ports in a variety of ways; others do not. Usually, states expect some sort of contribution to the development of the region.

Take the Port of N.Y. and N.J. for example: no state subsidies exist; one of our states, N.J., considers the port "an engine that generates jobs and revenues for the entire region;" the other, N.Y. believes the port should be self-sustaining.

These are, of course, both worthy objectives. But (unlike the situation on

the West Coast) in our competitive port environment it is extremely difficult to reconcile these goals – especially when faced with the growing power of alliances.

Because, while the ports are investing to grow for the longer-term future, the concentrated carrier groups are bargaining for the present and immediate future. As no port wants to lose a large customer, and as surely not all the capacity that will eventually come on stream can be profitably employed, the first thing to suffer is "rates."

In the ports' business, of course, that is lease rates, dockage, etc. – as well as an ever-larger capital contribution to the development of terminals tailored to the particular demands of the lines and alliances that are wielding this bargaining power.

Examples of Alliances Wielding Their Power

You are probably all aware of the Port N.Y. and N.J.'s negotiations with the Maersk/Sea-Land alliance; this is the quintessential example of the application of the increased power available to a consolidation of liner companies.

To quote a recent article in Lloyd's Port Management: "As carriers become larger and larger, the power they can exert over their suppliers becomes stronger. So when two of the world's largest carriers asked several USEC ports to tender [for a hub terminal] ... everyone jumped."

This alliance currently accounts for 19-20 percent of our port's volume, i.e. over 350,000 TEUs. Of course, the prospect of securing such a prize produced thrilling responses from our strongest competitors. And why not? Such volume would virtually double their total throughput.

But for us, even that sum of 20 percent was hardly an amount we could shrug off with equanimity; for it would drastically affect other terminal operations and businesses throughout the port, consequently affecting the entire regional economy.

But, of course, the Port of N.Y. and N.J. is by no means the only port that is vulnerable to shifting by alliances.

Charleston has just lost the cargo from one of the Grand Alliance's Asia/USEC services, namely the AEX leg that serves Southeast Asia via the Suez. Savannah is the gainer. The Grand Alliance already had their PAX service (Europe/USEC/USWC/Asia) calling there; so it made sense, instead of calling at two geographically close ports, to consolidate calls at one port. This shift amounts to around 75,000 TEUs. This means to Charleston a loss of about 6.5 percent of their volume; to Savannah, a gain of about 10 percent of their volume. And that from a shift of just one leg of an alliance's overall services!

Another threat to established ports is the increasing use of transshipment hubs. The relentless drive to lower costs is the progenitor of this threat and would have happened with or without consolidation.

But this is just another example of how alliances magnify any line's dealings with port businesses: what Maersk does is important; what the Maersk/Sea-Land global alliance does, can be devastating. Thus, Freeport in Grand Banama Island is the beneficiary of that magnified multiplier effect – the USEC South Atlantic ports are the victims.

What Is the Future For Carrier Consolidation?

Consolidation in the form of mergers has certainly yielded huge savings, P&O Nedlloyd being a prime example. Alliances of otherwise independent companies have certainly reduced costs, at least on the ocean carriage side. When more integration is achieved in terminal operations and inland movements, then the cost savings should rise dramatically.

As a Lloyd's Shipping Economist article said recently: "Looking to the future, it seems inevitable that alliances will be extended geographically over time."

Furthermore, "to continue being competitive, the scale of liner alliances will have to be enlarged." This does not bring great tidings of joy to ports caught in the competitive squeeze.

From the U.S. standpoint, the Ocean Shipping Reform Act is expected to increase the alliances' share of cargo volume. The rationale is that the big shipping lines will be able to take advantage of confidential contracting to secure more of the multinationals' cargo on a worldwide basis – which is why they have been pushing for this reform.

Some of the biggest lines are expected to swallow some smaller operators that are not in any alliance. And some of the future mergers are expected to occur between lines already in alliances.

Either way, that will only expand alliance power – and that would be emphatically true if, as some have speculated, only five or six shipping lines are left on the major trade routes.

As you have seen, on the North Atlantic the major alliances account for some two-thirds of cargo volume; together with the major independents, that share rises to three-quarters. As consolidation progresses, it would not be surprising to see alliances control over 75 percent of cargo volume; and with the major independents also growing bigger, in some cases by buying other lines, the total controlled by large shipping entities could exceed 90 percent!

The above-mentioned Journal of Commerce article cited a comment by a terminal operator that they could not arrest one line's vessels because of the serious effects that would have on the schedules of the entire alliance. The alliances had thus "gained too much power over stevedores and terminal operators because of their volume clout."

Perhaps one may delicately add "port authorities" to that list! But don't get me wrong: the consolidated alliances and/or merged carriers are doing precisely what any smart business entity should be doing! It's just that we ports have allowed ourselves to be seen across the negotiating table as a "deep pockets" provider of facilities and services.

What Should Be The Port Industry's Response?

Well, could that response include consolidation? While there have been some successes, recent experience does not appear propitious.

For example, the Delaware River ports (which include Philadelphia and the ports on the New Jersey side of the river) had been trying to combine for four years, but abandoned their plans for unification last year.

Los Angeles/Long Beach – even though these seamlessly side-by-side ports might appear obvious candidates for consolidation, and state politicians would wish it upon them, local political considerations have made this a nonstarter.

Interestingly enough, ocean carriers also object to any such idea, because it would result in less competition – and higher rates. Precisely!

But, as mentioned, there are successes. The Port of New York and New Jersey is already a consolidation of marine facilities lying on either side of the Hudson in both states. Despite what you might hear and read about political disputes, to our mind it is a successful grouping of the physical and the economic aspects of ports.

And the future bodes well, given our well-received strategic plan for develop-

ment of the region's ports through 2040.

The unification in 1982 of Virginia's Hampton Roads ports is another success story – but as they're serious rivals, that is enough praise!

Houston and Galveston have recently agreed to merge – something one may consider a "natural." However, the merger process is currently stalled in the Texas legislature as different bills to effect the merger are being considered. (And this exemplifies the difficulties of reconciling the innumerable political and economic [conditions] of the port itself and of the wider region around it.)

So, port consolidation's history in the U.S. is a mixed bag.

What Else Can Ports Do?

Perhaps an alliance of ports would be needed to counterbalance the carriers' growing power.

In the past, ports have established sister-port relationships with other ports – but generally with those on another continent. The intent and practice has generally been to provide some sort of coordination of marketing activities at each end of a trade route.

These ports have shared information and expertise, and dedicated themselves to partnerships with labor, the carriers, railroads and other industry players. These partnerships have confirmed the importance of collaboration for collective benefit.

But we are talking of something different here.

What is required is a much close "sister" relationship with ports that, up to now, have been keen competitors. So far, attempts at a wider and stronger alliance of USEC ports (rather than just a discussion agreement) have not been successful.

Unfortunately, there are some problems that have been, and might continue to present, insuperable obstacles:

For one, antitrust immunity for a fullblown rate-setting alliance may be impossible to obtain.

Differing priorities are another – and, really, a more fundamental problem. The varying economic and political priorities of the various states in which ports reside may never coalesce into an agreement permitting such an alliance to function properly.

- Would one port refrain from subsidizing its port so that a previously competitive port would actually obtain or keep the carrier alliance that is in play?
- Would one state deprive its citizens of immediate gratification (securing a new customer) for the longer-run bene-

fit of the multistate port/regional alliance?

- Will any of the ideas being floated for a National Ports System actually materialize into something more than just technical coordination or uniformity in navigation or security matters?
- And if they do, would one actually want the federal government to select which ports or merged ports are to be hubs?
- And if desirable, would that ever be possible in the U.S., given states' rights and other similar constraints?

These are all problems. But can we get to a solution that will allow ports to compete with the bargaining power needed to reap the rewards that their investments deserve?

What Concrete Steps Can the IAPH Take?

 Crucial to any negotiation is information. The IAPH is in an excellent position to build a database that would provide its members details of the various complex terms and conditions of facility leases.

Carriers know their contracts throughout the world. It is time that ports built up a similar knowledge base, so that one port can coordinate its negotiating stance with proper knowledge of market conditions.

2) Training is also a key factor in applying knowledge.

The IAPH can set up a program to train port executives in negotiating specifically with carriers. Such a program would help provide up-to-date expertise in the shipping industry and apply the knowledge gained from the database.

Coupled with the input of worldrenowned experts in negotiating techniques, strengthen ports' hands in dealing with one of the most important aspects of their business – leasing/operating their terminals at the best market rates.

3) Monitoring progress and providing continuing education and improvement is a necessary ingredient to success.

The IAPH should set up an ad hoc committee to perform this task; it would report to the board and publish its findings, as required; and it would be instrumental in purveying the results and recommendations to ports worldwide.

Perhaps such measures will help us reach the pot at the end of the rainbow – profitable, self-sufficient operation!

Container Vessels of the Next Generation: Are Seaports Ready to Face the Challenge?

By Alfred J. Baird

Director, Maritime Transport Research Unit Napier University Business School, Edinburgh Scotland, UK

(Presentation made at Working Session 6, the 21st IAPH Conference in KL, Malaysia, 21 May 1999

1. Introduction

Container ships of the next generation: are seaports ready to face the challenge? This is indeed a difficult question to tackle. There is a great deal of capital tied up in big ships and ports, and many jobs are dependent on such investments, both directly and indirectly. Moreover, given the importance of container shipping to the global economy, in seeking to adequately address a question such as this it is important to avoid crystal ball gazing, or offering subjective viewpoints based largely on one's own perceptions of the past and present.

The preferred approach adopted here is, firstly, to investigate and analyse the relevant literature, academic and industrial, in order to establish some theoretical and practical basis or background to the issue. Through such an analysis it has been possible to identify the key motivations for, and barriers against, increased ship size. Secondly, by establishing and then narrowing down the key variables involved in relation to the question, these factors are then tested via a questionnaire survey directed at the main industry participants, in this instance the top-30 carriers. The survey essentially challenges those at the front line, the carriers, to give their informed views relating to the question of bigger ships, and the ability of seaports to accommodate them.

The paper is therefore structured on this basis, containing three main sections as follows:

 Increase in container ship size – offering a review of developments during the early 1970's, followed by the post-Panamax breakthrough, and then on to today's ultra-large container ships, concluding with a review of the litera-



ture relating to why/why not build even bigger ships;

- Barriers to increased ship size with a necessary focus on traditional liner ports, existing container handling systems, alternative handling systems, and economic constraints; and
- Carrier views on next generation container ships – offering first an explanation of the survey method, followed by disclosure of findings relating to next generation ship size, likely impacts on ports, and action required by ports to permit the effective handling of bigger ships.

Findings resulting from this study may come as a shock to some ports, less so to others. What is certain is that there are significant changes afoot in the global container shipping business and each port must respond to these changes in the best way possible. However, to a very large extent, it would appear that the forces of change are beyond the influence of many individual ports.

2. Increase in container ship size

2.1 Early developments

When they entered the Europe-Far East trade during 1972, OCL's 3,000 TEU Panamax Liverpool Bay class ships were the largest container vessels in the world at the time. These ships had a length of 287m, beam of 32.2m, draught of 13.0m, and could accommodate 13 containers across deck (see Table 1). Whereas by the mid-1970's a number of lines, notably members of the Trio and Scandutch consortia groupings, had brought vessels of rather similar capacity into service, it was several years later before any further significant capacity increase was contemplated.

Indeed, the Liverpool Bay class remained the largest vessels afloat until 1981 when Hapag Lloyd introduced vessels of 3,500 TEU capacity. This was subsequently followed in 1984 by United States Lines series of twelve 4,300 TEU 'econships' (since scaled back to 3,600 TEU0, the latter incorporating a long slender hull and still capable of using the Panama Canal.

2.2 Beyond Panamax

The post-Panamax breakthrough came in 1988 when APL introduced its 'C' class vessels of 4,340 TEU. These ships were 275m long, with a beam of over 39m and capable of carrying 14 containers across on deck. However, it was to be several years later before many of the other major carriers were to follow APL into the post-Panamax era. Indeed, almost three quarters of the current post-Panamax fleet (i.e. generally vessels of 4,000 TEU and above) where built in the 1993-99 period. Emphasising the dramatic growth in the post-Panamax

Table 1. Landmarks in container sinp size increases						
	Date of delivery	Length (m)	Draft (m)	Beam (m)	Boxes across on deck	Capacity TEU
OCL	1972	287.0	13.0	32.1	13	3,000
Hapag Lloyd	1981	246.5	12.5	32.2	13	3,500
USL	1984	289.0	12.0	32.0	13	4,300
APL	1988	275.2	12.5	39.4	14	4,340
Hapag Lloyd	1991	294.0	12.6	32.2	13	4,400
HMM	1992	264.1	13.5	37.1	15	4,411
NYK	1994	299.9	13.0	37.1	14	4,743
OOCL	1995	276.0	12.0	40.0	14	4,850
Maersk	1996	318.2	14.0	42.8	17	6,000+
P&ON	1998	299.9	13.0	42.8	17	6,690
?	2000?	325.0	14.0	47.0	18	8,000
?	2000+	400.0	14.0	66.0	24	15,000

Table 1. Landmarks in container ship size increases

Sources: Derived from Cargo Systems/O'Mahony H. (ed) Report "Opportunities for Container Ports (1998); Containerisation International 1998 Yearbook; McLellan (1997).

fleet since then, by the end of 1997 there were 234 post-Panamax vessels in service, with at least a further 60 expected to be delivered by the turn of the millennium.

Lines closely following APL's lead included Hyundai Merchant Marine (HMM) and Hapag Lloyd, both introducing post-Panamax tonnage in the early 1990's, followed by NYK in 1994 with its 4,743 TEU *Altair* class of vessel (300m length, 37m beam, 13m draught, and 14 containers across deck). Interestingly, although loading capacity of the largest container ships increased by almost 2,000 TEU between 1972-1994, maximum vessel draught at 13m more or less remained the same.

A key stumbling block for many years concerned uncertainty in exceeding Panama dimensions. Even after APL's decision to order, carriers cited the flexibility of Panamax vessels in being transferable between routes as a major advantage not to build post-Panamax tonnage. Consequently, it took a further 5-6 years before other lines eventually committed themselves to post-Panamax building programmes. However, since the early 1990's the pace of development has accelerated with the next breakthrough in ship size arriving at two-yearly intervals or less.

2.3 Ultra-large container ships

Reflecting the rapid pace of developments since the early 1990's, Maersk Line introduced the first in a series of nine 6,000 TEU 'K' class vessels, Regina Maersk, in 1996. These vessels have a length of 318m, beam of almost 43m, and draught of 14m. The 'K' class vessels can fit 17 containers across on deck, and in the holds the double-hull structure can accommodate stows 14-wide. Maersk also has on order a further six 6,418 TEU ships, three of which are expected to be delivered before the end of 1999.

It has been suggested that Maersk intentionally under-declared the true capacity of its 'K' class ships. In reality, the first six in the series are believed to be able to load up to 7,760 TEU, while the remaining three vessels in the series will be 9% longer (346.7m) and are expected to have enough space for 8,736 TEU, with a greater draught of 14.5m. These estimates are based on each vessel carrying containers under deck and on the bottom five rows on deck with an average weight of 15 tonnes per TEU. while containers on top would be empties. Maersk are nevertheless expected to declare a nominal capacity figure of 6,600 TEU.

Largest declared vessel size increased further during 1998 when P&O Nedlloyd introduced the first in a series of four 6,690 TEU ships, the P&O Nedlloyd Southampton. Although shorter than Maersk's 'K' class, the P&O Nedlloyd ships can carry more containers by virtue of the fact that 15 containers can be stowed in each row below deck as opposed to 14 wide on the Maersk ships. Up to 3,406 TEU can be carried under cover in eight holds, six forward of the superstructure and two aft, with the remaining 3,284 TEU stacked on deck in tiers up to six high and 17 across the vessel's beam of 42.8m. Like the Maersk vessels, the P&O Nedlloyd ships have a fast service speed of 24.5 knots.

Table 2 summarises the largest class of container ships currently on order for each of the major carriers and which are expected to be in service by the end of 1999. A number of these vessels have already been delivered during 1998 and in the first half of 1999. Based on a total of 138 ships of over 3,500 TEU ordered by these 22 carriers, offering a combined aggregate loading capacity of 681,101 TEU, average ships size is an impressive 4,935 TEU.

A principal feature of orders placed during 1998 for delivery between 1999 and 2001 has been increased emphasis in large post-Panamax vessels above 4,000 TEU. Vessels loading 4,000 TEU and above account for almost 60% of capacity on order compared with 35% in 1997. In the 4,500 TEU-plus size range, the rate of growth in 1998 was a phenomenal 52.5% over 1997. By March 1999 the 4,500 TEU-plus sector accounted for 10% of all cellular slots deployed, up from 5% in 1995.

The 4,500 TEU-plus sector are also among the fastest container ships, with service speeds of up to 27 knots, although most are operated on a day-to-day basis at between 24-25 knots. Carriers however do have extra power in reserve to increase speed to make up for lost time in the schedule thereby maintaining schedule integrity. While shipbuilders such as HDW do not expect speed of ultra-large container ships to rise much above 26 knots because of high operating (fuel) and capital costs, the proposed Nigel Gee pentamaran design for Norasia may yet see development of 30knot 1,500 TEU feeder vessels; Norasia is currently introducing a series of ten highly efficient 25 knot 1,500 TEU ships designed by Nigel Gee. A combination of fast longhaul vessels, and even faster feeder ships, could potentially improve overall transit times even when taking transhipment into account.

2.4 Next generation - pessimistic view

Table 1 also outlined probable dimensions for a hypothetical 15,000 TEU container ship. Such a vessel would be likely to have a length of around 400m, beam of 66m, and draught of 14m, and accommodate up to 24 container across deck. But what is the likelihood of such a vessel ever being built? As one might expect, there are conflicting views with regard to this question.

Yet even the pessimists accept that ship size will reach at least 8,000 TEU; it already has, according to classification society Germanischer Lloyd, pointing to the underdeclared Maersk series. Reflecting this fact, Southampton Port are currently planning to extend terminal facilities to cater for what is described as..."the next generation of ships, which will carry about 8,000 TEU". There nevertheless remains a feeling amongst some observers that:

"Because of physical inhibitions in existing facilities the recent pace at which lines have increased the size of the biggest ships operating seems likely to

Table 2. Largest class of container ships for each major linercompany to be in service by end 1999

Carrier	No of vessels x TEU capacity	Carrier	No of vessels x TEU capacity
P&ON	4 x 6,690	APL	6 x 4,832
Maersk	9 x 6,000, 3 x 6,418	MOL	5 x 4,700
Sea-Land	9 x 4,354, 6 x 6,200	Cho Yang	4 x 4,545
NYK	5 x 5,700	DSR Senator	6 x 4,545
Hyundai MM	7 x 5,551	MISC	2 x 4,469
Evergreen	13 x 5,364	Hapag Lloyd	6 x 4,422
Hanjin	5 x 5,300	CMA/CGM	2 x 4,000
Cosco	6 x 5,200	MSC	2 x 4,000
Yang Ming	5 x 5,000	UASC	10 x 3,800
OOCL	8 x 4,960	ZIM	3 x 3,500
NOL	4 x 4,918	K Line	8 x 3,456

Source: Derived from Cargo Systems/O'Mahony H. (ed) Report "Opportunities for Container Ports" (1998); Containerisation International 1998 Yearbook.

plateau in the next few years". And, as a consequence of this:

"....we are unlikely quickly to see the dou-

bling of today's biggest containerships". Such views appear to cast considerable doubt on the likelihood of ships offering lifting capacities of 12,000 TEU or more being built, at least during the next decade. Others have concluded that:

"whether a 15,000 TEU container ship will ever be seen is debatable".

However, even some critics accepts the historic inhibition on ships of 6,000+ TEU due to the lack of a sufficiently powerful engine has now been overcome, pointing to development of Sulzer's 12RTA96C generating almost 90,000 bhp, and a Man B&W engine generating over 93,000 bhp, both capable of driving a fully laden ship of up to 8,000 TEU on a single screw. Yet the view that ships must reach a maximum size is not recent; in 1992, during the debate at that time concerning post-Panamax ships, senior industry executives were arguing the same thing, with one stating:

"Post-Panamax vessels may well top the 5,000 TEU mark, but...major operators may want to keep their powder dry by sticking to vessels able to transit the Panama Canal."

Such views have since more or less been kicked into touch by subsequent developments vis-à-vis the plethora of post-Panamax newbuilds. Yet recently, Japanese carrier executives in particular have voiced growing concerns about expanding ship size, with a number opposing significant scale increases, claiming:

"Large vessels and their accompanying port infrastructure are not the answer and lead to increased fixed costs and a limit on service flexibility".

"...the line haul savings (of a 6,000 TEU vessel) are minimal...(and) this advantage is quickly eaten up by land side diseconomies and by the need to cut rates to fill the ships."

"Nobody can fill these monsters.....you have to get your competitor to prop you up to fill the space".

Perhaps even more emphatically, Makoto Ishi, Executive Vice President of Mitsui OSK Lines, was recently quoted as saying:

"...I see little possibility that mammoth ships surpassing the largest vessels now in service will appear in the near future – namely, within the first decade of the 21st century."

2.5 Next generation – optimistic view

So much for the pessimists, what about the optimists? While Cargo Systems O'Mahony (1998) at first appears a little sceptical, he acknowledges in what is a very detailed report on the subject, that the upgrading of vessel sizes present no major technological challenges to shipbuilders, stating that the main issue as to whether

Table 3. World port container throughput growth between1995 and 2010

	Optimistics scenario			Pes	simistics scena	ario
	index	million TEU	% growth	index	million TEU	% growth
1995	100	142	- 1	100	142	_
2000	156	222	56	156	222	56
2005	236	235	51	215	306	38
2010	327	465	39	275	391	28

Source: Ocean Shipping Consultants (1996), *The World Container Port Market* to 2010. (Certsey: UK)

10.000-15.000 TEU ships will ever be deployed is economic. An earlier study by Drewry Shipping Consultants in 1996 concluded that with full slot utilisation, a 6,000 TEU vessel would offer a 20% cost advantage compared with a 4,000 TEU Panamax ship. Even larger vessels, again assuming a high level of utilisation, would offer further unit cost advantages to operators. Others noted that if a 4,000 TEU vessel is just about breaking even with rates of \$1,000 per TEU, this means that Maersk's 6,000 TEU ships will still be in profit when rates have fallen to around \$500. The question this therefore raises is what further economic benefits might accrue from even larger vessels?

Again on the positive side, ship classifiers Germanischer Lloyd (GL) envisions that 15,000 TEU ships could be deployed in major east-west trades by 2010[8]. These large vessels, according to GL, would be served by 3,500 TEU feeders relaying containers to major regional ports, with smaller 1,500-2,000 TEU feeders sailing to minor ports. Given that GL is one of the largest classifiers of container tonnage, having registered 25% of the current fleet of pure container ships and 41% of those on order, it would seem prudent to take these views seriously.

But what other major pressures exist to generate demand for bigger ships? Well, in this respect, steady downward pressure on freight rates, coupled with the impending requirement for carriers to replace outdated tonnage can mean only two things:

- Lines are constantly searching for greater economies of scale (through upsizing) in an effort to reduce unit costs: and.
- As a significant fleet replacement programme is imminent anyway, the next few years will be when the entry of big new ships should be most expected.

Further supporting this theory, *Containerisation International* point out that older and slower ships will be scrapped in fairly large numbers over the next few years and this will pave the way for a new generation. Indeed, some 12.3% (526,113 TEU of capacity) of the global container fleet is 20 years and older and could be retired in the first three years of the next millennium. Upwards of 100,000 TEU of capacity is expected to be scrapped in 1999. In addition, a considerable amount of mid-1980's tonnage featuring slow-speed diesel propulsion units may become uneconomic sooner and could lead to relatively higher scrapping levels taking place.

Complying with the GL view, de Monie (1997) confidently predicts the level of container traffic growth between 2000 and 2010, which virtually doubles even under a pessimistic scenario (see Table 3), will support:

"Further concentration (of carriers) into new multinational transport monoliths acting as logistics providers on an intercontinental floor-floor basis...with oligopolistic powers, massive trade volumes on the main East-West routes and continued shipper pressures for lower logistics costs (which) will lead to a further increase in the size of vessels deployed (and that)...the probability is high that the long Est-West hauls will be carried out by fast containerships of possibly up to 15,000 TEU, calling at just four or five ports on their pendulum itinerary."

This quite an optimistic vision of the future in terms of ship upsizing, but how realistic is it when based largely on global traffic growth projections? A note of caution is inevitably required as this assessment is based on container traffic flows and anticipated GDP growth rates prior to the Asian financial crisis; whilst the OECD previously forecast that world trade overall should grow by between 8% and 9% annually over the 1998-2000 period, global trade is actually expected to slow in 1999 and 2000 to between 2% and 3% a year. Yet this still represents considerable additional traffic volumes of approximately 2 million TEU annually.

In any event, the Asian crisis has not actually reduced the total volume of containers handled in many ports. What it has done is create greater traffic imbalances (notably an increase in outbound Asian traffic), altering the directional flows of full containers, and in turn increasing the flows of empty units returning to Asia. In a nut-

shell, most major ports in Asia, North America and in Europe, are still experiencing rising traffic volumes, year on year, despite the financial crisis.

The role of 15,000 TEU ships would in any event be very different to that of the present large container ships, according to de Monie (1997). Such vessels would be exclusively used for maintaining fast eastwest and west-east long hauls, calling only at off-shore ports from where all containers carried would be transhipped. These ships would call at perhaps only up to five transhipment terminals located along the main east-west trajectory, what de Monie terms a "necklace" of off-shore mega-hubs. However, global liner alliances need not necessarily call at the same mega-hubs, implying that there could be a demand for additional transhipment centres to serve competing groups of lines.

De Monie maintains that construction of a string of mega hubs has already started, pointing to the commissioning of container facilities at Gioia Tauro, Mina Raysut in Oman, Freeport Bahamas, and Manzanillo in Mexico. Gioia Tauro literally came from nowhere and, within three years of opening, is today handling over 2 million TEU a year, demonstrating that terminals of this nature can become highly utilised very quickly indeed. These facilities are solely dedicated to transhipment activities, and are what de Monie refers to as global pivot ports, which will be linked by varying sizes of feeder vessel to regional pivot ports, to sub-regional main ports, and to feeder ports.

3. Barriers to increased ship size

3.1 Constraints within traditional liner ports

Put simply, many traditional liner ports are not designed to receive ultra-large container ships. Liner ports tend to be close to the centre of conurbations, often in alluvial plains at the mouth of silted rivers. As such, the initial problems most ports face when it comes to handling larger vessels is water depth restrictions, quickly followed by land traffic congestion and resulting bottlenecks locally.

As a result of almost constant traffic growth since the containerisation of world trade began in the 1960's, traditional liner ports throughout Europe, North America and Asia are increasingly suffering from congestion and scarcity of land. Ports such as Hamburg, Antwerp, Felixstowe, New York, Tokyo, Yokohama, and Hong Kong all have capacity constraints in one form or another. Increasingly, these ports also face significant environmental pressures, in addition to local demands for alternative land use priorities.

But is being a city hub port essential in

the new era? Will an urban or semi-urban mainport location not increasingly be viewed (by carriers and shippers) as a negative factor? Where port expansion is restricted by adjacent urban conurbations, and/or expansion is extremely expensive or impossible, clearly existing facilities will be unable to accommodate expanding throughput and this must place a constraint on growth.

Even for non-city ports such as Felixstowe or Bremerhaven, there is a limit to development. Felixstowe has experienced a virtual doubling of traffic every ten years, which means the port has to double capacity each decade. After reaching its statutory land limits, Felixstowe now finds it cannot expand any further. The only way ports which find themselves in the same position as Felixstowe can handle more traffic is to make existing quaysides more productive (e.g. more and faster cranes), but this inevitably has its limits.

The only ports which are unlikely to be faced with serious congestion problems are pure transhipment hubs, and these are arguably the ports that bigger ships are most suited to. As a consequence of this, according to de Monie, there is now a general structure evolving in which a few selected global pivot ports (i.e. transhipment mega-hubs) are being developed to serve the main east-west trades and very big ships. The role of the 15,000 TEU ship will be very different to that of the present large containerships, suggests de Monie, and this calls for a specific type of port. The site itself must be sufficiently central to serve a large sub-region and allow feeding costs to be minimised. Such a 'necklace' of mega-hubs may well take the next twenty years to be completed, but progress has already begun.

The key factor for any transhipment mega-hub is location: a favourable location of a transhipment hub is close to trunk routes where deviation time is kept to a minimum, allowing for as short a trunk-haul transit time as possible and, using fast feeder services, ensuring door-door movements for various origins/destinations remain time and cost competitive with alternative direct service options. As offshore locations are also much cheaper to develop and to maintain than existing ports, lower running costs might be expected to further benefit global carriers.

Current practice whereby vessel schedules provide for multiple port rotation at each end of a trade is in any event timeconsuming. Deep-sea vessels on a 4-5 port call rotation in Northern Europe typically spend about one week zigzagging between several terminals located alongside the North Sea Basin. Conversely, a fast 15,000 TEU ship calling at an uncongested offshore transhipment mega-hub and directly connecting there with fast feeders for on-carriage of cargo directly to each final destination port (which may formerly have been served via feeder in any case) could actually lead to faster overall transit times.

The primary benefits derived from such a strategic change would be as follows:

- Reduced pressure on existing land areas at mature traditional mainports;
- Reduced costs incurred at traditional mainports from diversion of largest ships to cheaper offshore mega-hubs (e.g. less dredging/towage/multiple calls);
- Reduced pressure on traditional mainports to act as transhipment centres with all the implications this entails for additional land take/access; and,
- Development of mega-hubs sited well away from developed industrial or residential hinterlands.

With more and more feeders of varying sizes serving the mega-hubs, this would create new opportunities for lesser used regional ports to reinstate some of their unused capacity, further easing pressure on the more congested larger traditional liner ports. The idea would be to spread increasing demand (for freight transport) across more ports in any given region; the global mega hub pipeline would seek to create the conditions necessary for this to happen.

Under-keel clearance in approach channels needs be at least 10% of vessel draught at low water. To accommodate the 6,000 TEU Maersk Sovereign, berth depths need to be at least 15m while the channel ought to be a minimum of 15.4m; where the seabed consists of rock then 16m is considered necessary to avoid possible damage to the keel. The reality is that few ports around the world can offer 24-hour access to the latest generation of Maersk super container ships and this is where the major new deep-water transhipment port projects come into their own (see Table 4). While vessels of 15,000 TEU would be expected to have rather similar draught requirements to existing 6,000 TEU+ ships, their very wide beam would place additional pressures on channel width as well as depth.

Most traditional liner ports have dredged depths of between 12-14m and are therefore struggling to maintain and deepen channels in order to handle bigger ships. Clearly, traditional liner ports must continue to modify and adapt existing facilities in order to handle the biggest vessels, and this is a particularly expensive exercise. For example, the single most costly challenge for Southampton in enabling the port to accommodate the new Maersk 'K' class vessels was to deepen the main channel, plus widen the turning basin and several passing places. These improvements alone

Ports	Max. berth depth (m)	Remarks	
Algeciras	16	at Muells de Navio	
Malta Freeport	15.5	at new Terminal 2	
Gioia Tauro	12.5	15m eventually	
MITH, Sardinia	14		
Aden	16	capacity for 18m, completion March 1999	
Mina Raysut	15.5		
Manzanillo, Panama	13	14m in channel	
Freeport, Bahamas	16		
Sepetiba	18.5	14m minimum, still at planning stage	
Kabil, Batam Island	17	still at planning stage	
Kitakyushu, Japan	15	Stage 1 due for completion 2003	
Vung Tau, Vietnam		under construction	
Kwangyang, S. Korea	15	16m under consideration	

Table 4. Major pure transhipment hub projects - maximumberth depths (m)

Source: Derived from CI Yearbook 1998, Fairplay Ports Guide 1998, Cargo Systems/O'Mahony, H. (ed) Report "Opportunities for Contaienr Ports" (1998)

cost a total of some \$41 million. Many other ports are currently making similar or even costlier improvements (e.g. New York, Oakland, Hamburg, Antwerp, Hong Kong, Tokyo etc.), with dredging programmes in some ports involving capital expenditure running to several hundred million dollars.

Dredging is a constant process, particularly in inland ports which suffer from siltation. This is not the case with many of the new offshore mega-hubs, which have the natural benefit of deep water to begin with; ports on the Arabian peninsular and in the Caribbean, have minimal need for maintenance dredging owing to low silting and, in the case of the former, low annual rainfall.

It is no accident that carriers operating the largest vessels have recently been moving their big ship services away from upstream inland ports towards terminals located next to the open sea (e.g. Maersk/Sea-Land moving out of Hamburg to Bremerhaven, and Evergreen moving from Antwerp to Zeebrugge). In fact this is really the continuation of a much longerterm trend, reflected in the ongoing development worldwide of modern utilised terminals at coastal deep-water locations.

Dredging within existing ports also needs to take into account the strength of the pilling supporting the wharf infrastructure, especially when larger quay cranes are planned for as they have greater wheel loads. There is also a danger of dredging so deep at the berth that wharf foundations are undermined. The result of increased crane size is a heavier structure, increased wheel loads (adding to pressure on existing quay structures), and increased trolley travel distance. Furthermore, with a length of 318m the Maersk K-class overhangs a standard 300m berth. The later nine vessels in the Maersk 'K' class series will be around 10% longer and, consequently, when these ships are alongside they will reduce available berthing capacity for other vessels. In addition to problems on the berth, big ships also have difficulty in negotiating river meanders and in turning, which suggests that inland ports and/or ports with limited turning circles will tend to be avoided by such vessels.

3.2 Container handling/productivity

To increase productivity the cycle time to move containers on and off the ship must be decreased. Currently a discharge rate of at least 35-40 moves per crane/hour is needed when handling large ships. To more effectively work even larger vessels this level of productivity must be improved upon.

One obvious way to increase productivi-

ty is to deploy more cranes per ship. At present the practical limit in handling the Maersk 'K' class ships is 6 quay cranes. However, several ports are unable to allocate six cranes to the one ship; only four quay cranes can be used at Southampton and Gothenburg, for example. This is partly because available quay length can only allow for up to four cranes.

At many ports the existing quay cranes are simply unable to handle the new 6,000+ TEU generation vessels. At Southampton, special narrow fenders had to be installed to allow the cranes to handle 17-across on the Regina Maersk 'K'-class. Future generations of 10,000 TEU ships will accommodate 21 containers across and this will require cranes with an outreach of 54-56m, some 10m greater than cranes handling existing post-Panamax vessels (see Table 5).

In an effort to accommodate bigger ships, crane outreaches of 48m+ have been specified by most of the largest terminal operators handling substantial transhipment cargo, as illustrated in Table 6. Over the 1996-98 period, the percentage of ports ordering cranes with 45m+ outreaches has risen from 41% to 56%. In general, it is those ports with current and prospective major transhipment business which have been placing orders for super post-Panamax cranes [e.g. PSA Corporation, Malta Freeport, Mina Raysut (Salalah), Gioia Tauro, Long Beach and Rotterdam]. Consequently, it is mostly these ports that have been ordering cranes with a 22-container (50+m) outreach, suitable for handling vessels of 8,000-10,000 TEU. Cranes of 60m outreach are planned for installation at the new Altenwerder terminal in Hamburg on its completion within the next 2-3 years.

Some post-Panamax vessels stack seven high above deck and this can also mean investing in quay cranes with higher hoisting capabilities. The new Maersk 'K' class vessels have proved awkward to work at high water in some ports. Currently most ports are unable to work vessels stacked 7high, more especially where high-cube containers are concerned. Thus, while many post-Panamax cranes have lift heights of between 33-37m, cranes ordered recently for major transhipment terminals (e.g. Aden and Vancouver) have lift heights of as

Table 5. Category of gantry crane and length of outreach

Category of crane Outreach from sea-side ra (m)*		No. boxes across on deck
Standard Panamax	36-44	14-16
Post-Panamax	44-48	16-18
Super post-Panamax	50-52	18-20
Ultra post-Panamax	54-56	20-22

Source: Cargo Systems/O'Mahony, H. (ed) Report "Opportunities for Container Ports" (1998).

Table 6. Gantry cranes with 50m+ outreach on order for delivery1996-98

Client	Supplier	No.	Outreach (m)
Aden	Reggiane	4	52
Antwerp-SCTN	Nelcon	4	52
Antwerp-Hessenatie	Nelcon	2	50
Barcelona-TMA	Kone	2	50
Bremerhaven	Man Takraf	3	53
Freeport Bahamas	MGM	4	51
Gioia Tauro-Medcenter	OMG	3	50
Hamburg-HHLA	Noell	3	53
Hong Kong-MTL	МНІ	6	50
Khorfakkan	Liebherr	2	50
Kobe	МНІ	5	45-50
Kobe	IHI	1	50
Los Angeles-Evergreen	MHI	6	50.3
Long Beach-Cosco	ZPMC	6	54.9
Long Beach	MES	6	50.3
Malta Freeport	OMG	6	54.5
Mina Raysut	IHI	6	53
PSA Corp	МНІ	12	55
Rotterdam-ECT	Nelcon	3	56
Vancouver	Reggiane	1	50.3

Source: Cargo Systems/O'Mahony, H. (ed) Report "Opportunities for Container Ports" (1998).

much as 50m.

Faster trolley speeds can also aid productivity levels. Trolley speeds of 120m-180m/minute are standard for the majority of cranes in current service. However, most of the recent crane orders have specified trolley speeds of at least 200m/minute and some as high as 245m/minute (e.g. Long Beach). Cargo Systems concluded that to effectively work vessels in excess of 6,000 TEU trolley speeds should be capable of 245m/minute.

In addition to faster trolley speeds, there has also been pressure for faster hoist speed. Hoist speed of some larger cranes has increased from 65m/minute to as high as 90m/minute on a Noell machine installed at Zeebrugge.

Higher productivity levels are usually based on the assumption that a chassis, straddle carrier, or AGV will always be ready to serve the crane; this is not always the case in practice and service to the quay often limits productivity. Faster working at the quayside is of little use unless containers can be delivered and taken away fast enough to avoid any build-up under the quay cranes. Semi-automated and automated terminal systems can be used to help speed up yard transfers. A fully automated system, replacing high-coast labour and ensuring 24-hour operations, is planned for the new Kawasaki terminal, the latter due to open early next century.

Any huge increase in container volumes can nevertheless cause problems ashore. Expanding gate capacity is usually one of the first considerations. To improve yard capacity RTG's capable of stacking 1 over 5+ lift heights have also been specified by the main hub ports.

Pessimists point out that for cargo delivered by land the peak handling requirements created by two simultaneous 6,000+ TEU ships would create problems if working rates faster than today's were to be achieved. However, this ignores the point made by de Monie that in future the biggest vessels are expected to serve offshore transhipment terminals, not facilities requiring excessive land transport access. Similarly, any notion that twelve 15,000 TEU ships would be needed to maintain a weekly schedule currently provided by nine smaller vessels due to extra time spent in port ignores the probability that 15,000 TEU ships would have a very different port call sequence (i.e. 4-5 transhipment mega hubs, rather than 9-12 calls at traditional liner ports on a typical 84-day Europe-Far East turnaround).

3.3 Alternative handling systems

Where ship beam has become too large for existing gantry cranes, one alternative is to revise ship's bay plans so that a vessel can be worked from the starboard side at some ports and the port side at others. However, this option might be expected to place too much torsional pressure on a vessel's hull.

Use of double trolleys could help to increase productivity; realistic handling rate of a double trolley is 45-70 moves per hour, resulting in a potential increase in productivity of up to 50%. Inevitably, improved yard systems would be needed to support such speeds.

Alternatively, a ship could be serviced from both sides of a slip. With six double trolley cranes per side, and each dual hoist crane producing 55 moves per hour, it is estimated that productivity could be as high as 660 moves per hour.

Morris Cranes are understood to be working on a preliminary design for a 1,500 tonne gantry crane capable of handling a 69m beam ship. However, some doubt the practicality of this in that many existing quay faces/crane rails would be unable to cope with a 50% increase in crane weight . Yet this again rather ignores the point made by de Monie that vessels of this size would not be intended for traditional liner ports, they would be built for operations between new offshore mega-hubs at which infrastructure would be custom-built to cope with such demands.

Another alternative handling system is for a bridge or cantilever crane with a span of 100m across a 60m wide slip. Such a system would require runways which would be very costly and cranes could not pass the ship superstructure or each other. Added to these problems, new designs of slips or docks would be necessary. Still, this is one for crane and terminal designers to play with even though bigger gantry cranes do seem entirely possible.

There seems little doubt that IT systems will also need to be improved in line with scale increases in vessel operations. For example, existing computer software may have to be adapted to handle a 17+ containers wide screen and print-out/EDI formats. In addition, stowing arrangements are becoming more sophisticated with the help of proprietary planning software.

3.4 Economic constraints

A major barrier to upsizing relates to the significant capital cost involved, both in terms of ships and terminals. In the case of ships, growth in traffic volumes must be covered either by increasing the number of strings operated, or by vessel upsizing, or both. A single Europe-Far East 9-ship service string plus container fleet and associated logistics/office network costs around \$1 billion. To provide a global service, even in alliance with other lines, requires an investment of at least double that amount. This represents a vast amount of money tied up in assets, and is increasingly an

option only for the largest carriers-to consider.

Bigger ships are hungry beasts, and will therefore force a line to ensure it has more containers at its disposal. Logically, such ships will also demand considerably more cargo and this means a line really needs to be global in scope (offering a global service is a prerequisite in order to secure global contracts from the world's major volume shippers). The constantly increasing scale of investment, coupled with the wide scope of operations necessary, constitutes an effective barrier to potential new entrants.

Capital investment requirements in providing new port facilities are also very significant. For example, development of the two-berth Deltaport Terminal in Vancouver cost \$164 million. The latter terminal offers 40 hectares of back-up land, an intermodal rail transfer facility, and four super post-Panamax cranes capable of spanning 18containers wide. Deltaport has a natural depth of 15.85m at mean low water (thus avoiding high dredging costs) and can handle two post-Panamax vessels simultaneously. Modern Terminals Limited (MTL) 2berth facility at Shekou Container Terminal (Phase II) cost a total of \$219 million, while the new 6-berth CT9 in Hong Kong is costing a total of \$1.3 billion. Essentially, each new berth inclusive of handling equipment etc. designed to handle just one ultra-large container ship can cost upwards of \$100 million

In addition to very high capital costs, there is also a perceived time cost or penalty associated with big ship operations. For example, P&O's 6,700 TEU ships are expected to spend 50% longer in port than its 4,400 Jervis Bay class. This is the main reason why P&O, Maersk and others have gone for faster 24.5 knot service speeds, so that the big ships can make up time at sea, to cover the extra time spent in port. Lines are nevertheless clearly looking to ports to improve productivity thereby shortening ship time in port.

The economic rationale for development of de Monie's 'necklace' of global transhipment mega-hubs is to a large degree dependent on the deployment of very large container ships as low cost, long haul maritime transport providers, coupled with the necessary technological advances to make such ships and the required transhipment terminals operationally practicable. But why is such a development likely? At its most simplest, the rationale for this is directly associated to the decline in freight rates which has led to increased pressure for lines to seek the lower costs that come from upsizing.

However, Lim warns that it would be dangerous to generalise about the economies of scale derived from larger ship size, concluding that the effect of ship size on voyage results can vary in accordance with such factors as: ship's purchase price, level of running costs, level of freight rates, voyage length, achieved load factors and accounting methods used for allocating fixed costs. In a later article, Lim further argued that:

"....economies of scale is negated whenev-

er assets become under-utilized".[40] This is a key point; it is all very well building ever larger ships but they must be filled, and at the right price. On routes where they are not filled, or at least not filled to a sufficient level, and/or at uneconomic freight rates, it could be argued that there may actually be advantages in operating vessels of rather lesser capacities. Indeed, quoting from Drewry, Lim noted that:

"The 6,000 TEU slot cost advantage will become a disadvantage at utilization levels below 79% compared to a full Panamax ship".

Notwithstanding Lim's reservations, in essence, there seems to be two key variables at work here. Firstly, for carriers to invest in bigger vessels, they must be convinced that forecast traffic flows justify the additional ship capacity decided upon. In other words, adequate market demand exists, or will exist. Secondly, carriers anticipate a further decline in freight rates and clearly one of the principal ways to withstand added pressure on rates is to search for greater scale economies in order to reduce unit costs. The principal way to achieve the latter is through building bigger ships.

4. Carrier views on next generation container ships

4.1 Methodology and sample size

While an expanding literature is developing on the increasing size of container ships, it is still not abundantly clear exactly how big vessels will become. In an effort to try to answer this question, a questionnaire survey directed at senior executives of the world's top-30 container lines was carried out during January 1999. The objective of the survey was twofold, firstly, to establish carrier views and perceptions concerning how big container vessels might become in the next twenty years and, secondly, to identify key barriers in relation to ports handling such vessels in future.

Thirteen of the top-30 carriers replied to the questionnaire, resulting in a relatively positive response rate of 43%. There was also a good geographical spread with five of those responding being European-based, 4 Asian, 2 North America, and 2 from other regions. Of those responding, 5 were top-10 carriers, with the remaining 8 lines spread throughout the top 10-30 league table.

Combined, the 13 carriers who did respond controlled an aggregate 50% share of the total shipboard capacity offered by the world's top-30 lines. In addition, the respondents share of 3,500+ TEU vessels on order by all top-30 lines amounted to approximately 55%.

Essentially, the questionnaire provided a number of options and sought responses to four key questions, namely:

- What size did carriers think container ships of the next generation (i.e. by 2020) would increase to?
- What impact would this increase in ship size be likely to have with respect to service provision and container handling costs?
- What were the main perceived port constraints to increased ship size?
- What should ports do to effectively handle ships of the next generation?

The questions therefore sought to address many of the critical issues raised in earlier sections of this paper. What follows is a summary of the carriers' reasonses to each of these questions, with additional carrier remarks provided where appropriate in an effort to further emphasise issues considered by respondents to be important.

4.2 Next generation container ships

Just over half of respondents (54%) were of the opinion that container ships would not exceed 10,000 TEU capacity by 2020, while 23% stated a 12,000 TEU ceiling (see Table 7). However, some 23% of carriers believed that containerships would reach or exceed 14,000 TEU levels. More significantly, those carriers suggesting vessels would reach 14,000 TEU or larger consisted of top-10 lines currently operating vessels in excess of 5,000 TEU. Conversely, almost all of the lines suggesting more moderate scale increases in vessel size to 2020 operate vessels under 5,000 TEU.

One top-10 carrier went further, forecasting that 10,000 TEU capacity would be reached before 2007, 12,000 TEU by 2015, and 14,000 TEU after 2015. Overall, responses indicated that those carriers already operating the largest vessels believe 14,000 TEU ships or above will ulti-

Table 7. What maximum TEU capacity do you expect the next generation (i.e. to 2020) of containerships to offer?

	Carrier responses
8,000 - 10,000 TEU	54 %
10,000 - 12,000 TEU	23 %
12,000 - 14,000 TEU	8 %
Over 14,000 TEU	15 %

mately enter service, while those operating more moderate-sized mainline vessels tend to envisage a less ambitious ceiling of 10,000 TEU ships.

One notable comment offered by an executive from a carrier already operating vessels of 6,000+ TEU capacity was:

"The size of the ship could go up to whatever level the ports and infrastructure can manage. The physical size of the ship is not a hindrance in itself – and it does not call for rocked science to build a ship longer and wider than current vessels!" (Top-10 carrier)

Several carriers highlighted the increasing importance of vessel speed, substantiating a point made earlier in the paper that extra time spent in port must somehow be compensated for at sea. Comments in this respect included:

"(The) problem of speed versus engine and (fuel) consumption are maybe also a real problem as average 25+ knots will certainly be required!"

(Top 10-20 carrier)

"Higher speed is going to become more essential."

(Top 20-30 carrier)

The latter carrier, however, cautioned against certain lines seeming constant desire to search for cost reductions through scale increases in vessel size, claiming that:

"One must remember... the law of diminishing returns – size/quantity increases will yield ever smaller cost reductions". (Top 20-30 carriers)

Nevertheless, even this carrier admitted that ships would get bigger, albeit arguing that they would remain the exception and that the longer term "maximum ideal ship size" would be smaller even than today's maximum sizes. Related to this, other lines mainly operating moderate-sized vessels of below 3,500 TEU asserted that:

"Bigger ships are only more economical between mega-hub centres. Transhipment and additional feeding costs eats up the cost saving due to scale of economy and makes smaller vessels calling at ports directly more competitive". (Top 20-30 carrier)

"Bigger ships limit choices to the shipper – operators will come under attack by the smaller faster operators who cater to specific markets. Frequency and transit time are still key issues which ship size alone does not address".

(To 20-30 carrier)

The question largely seems to be one of 'horses for courses'. Ultra-large container

vessels, perhaps up to or indeed exceeding 14,000 TEU capacity, are clearly expected (at least by current big ship operators in the top-10) to enter service within the next two decades. These vessels are also expected to connect together a relatively limited number of mega-hub centres, from where fast feeder ser-

 decades. These vessels
 No view expressed

 are also expected to
 Reduce container handling costs

 connect together a relatively limited number of
 Increase container handling costs

 increase container handling costs
 No view expressed

 where fast feeder services will operate, employing vessels of
 No view expressed

 vices will operate, employing vessels of
 4.4 Port constr

 However, lines also appear to suggest that
 Almost two th

 numerous east-west direct services will
 expected termin

 continue to operate much as they do now;
 arising from the

 bigger ships are not therefore expected to
 sels (see Table

result in any widespread withdrawal of direct services, at least not in the mediumterm. This therefore suggests there will be an ongoing need for many existing direct call ports to continue to offer facilities for moderate-sized tonnage of up to 5,000 TEU.

4.3 Impact of bigger ships on ports

Providing further confirmation that ultra large container ships might be expected to have a quite different function from today's more moderate sized vessels (e.g. by calling only at relatively few mega-hub transhipment terminals), an overwhelming 77% of respondents agreed that bigger ships will offer less direct calls than current vessels (see Table 8). Not one respondent believed that bigger ships would offer more direct calls than current vessels. This finding tends to further reinforce the de Monie thesis with regard to development of a few global pivot ports which will handle ultra large vessels.

Some 46% of respondents (mainly operators of 4,000+ TEU ships) expected reduced container handling costs in port due to the introduction of bigger vessels, whilst only 8% anticipated an increase in

container handling costs. However, a significant 31% of lines, albeit mostly comprising operators of vessels under 3,500 TEU, suggested the introduction of bigger vessels calling at a few mega-hub ports would increase transhipment expenses. A few of the lines which expected container handling costs to fall also suggested that any cost reduction would be unlikely to be significant.

Table 8	3. Do	you think	(servi	ices	mai	ntai	ned	by	bigger	ships
			in fu	iture	e will	l:				

	Carrier responses
Offer less direct calls than current vessels	77 %
Offer more direct calls than current vessels	0 %
No view expressed	23 %
Reduce container handling costs	46 %
Increase container handling costs	8 %
No view expressed	46 %

4.4 Port constraints in handling bigger ships

Almost two thirds of respondents (62%) expected terminal productivity problems arising from the introduction of bigger vessels (see Table 9). Related to this, 54% of lines foresaw difficulties in relation to terminal congestion. Some 46% of lines expected bigger vessels to spend longer in port, with one major carrier commenting:

"... the critical (issue) is – larger ships require faster terminal speeds – for every 3,000 extra TEU of ship size, working speeds have to increase by 40 containers per hour to avoid prolonging voyage times".

(Top-10 carrier)

Available draught at berths and in port entrance channels was considered a constraint by 46% of respondents, while crane lift height was mentioned by 38%, and berth length by 31%. Constraints in respect of ship turning circle was mentioned by 15% of lines, with the same amount mentioning problems with cargo connection. With regard to the latter issue, carriers anticipated problems with landside evacuation, gate waiting times, and intense pressure being put on available rail capacity in some ports.

Interestingly, few carriers mentioned crane outreach or quay strength to be a problem

	Carrier responses
Terminal productivity	62 %
Terminal congestion	54 %
Longer ship time in port	46 %
Berth and channel draught	46 %
Crane lift height	38 %
Berth length	31 %
Turning circle	15 %
Intermodal cargo connection	15 %
Crane outreach	8 %
Quay strength	8 %

Table 9. What do you consider are the main constraints with respect to increasing ship size?

in handling bigger vessels. However, one carrier added a further constraint which might be expected to arise after the introduction of bigger vessels, namely a market constraint whereby shippers would have just:

"... one (big) ship on one day (per week) versus 3 (smaller) ships on 3 separate days to choose from". (Top-30 carrier)

This point again relates to the issue raised earlier by another carrier, that the big ship does not necessarily answer the key issue of service frequency and transit time. For example, shippers are unlikely to be enthusiastic about bigger ships if transit time increases and sailing frequency reduces, in addition to direct calls being replaced by feeder connections. However, those lines seemingly preparing to adopt the offshore mega-hub/ultra-large container ship recipe could answer this criticism by retaining at least some key direct call strings on the menu.

The Jury is still out on whether a combination of fast ultra-large ships combining with fast feeders at strategically positioned, cheap, and uncongested offshore regional pivot transhipment centres, would offer a viable alternative to direct calls. In the final analysis it may well be that such a combination could offer lower costs and fast or even faster transits compared with the current time-consuming multiple direct call port rotation at the end of each trade lane.

4.5 Action required by ports to handle bigger ships

Carriers offered a range of suggestions whereby ports could more effectively meet the needs of ultra-large container ships (see Table 10). A significant majority of respondents (77%) thought ports should provide more cranes per ship, with 69% also maintaining that larger and faster cranes would be needed, both on the quayside and in the yard. The need to increase terminal stacking capacity was mentioned by 69% of carriers, with 38% arguing for more automation of terminals.

Some 38% of lines thought that berths and port entrance channels would require deepening (and in some cases widening), and that berths would need to be lengthened, with 23% also suggesting the continued development of new off-shore ports. Restrictions on vessel draughts at east coast USA ports were specifically mentioned as an issue, as was the Panama Canal. Other options proposed by lines to enable ports to more effectively handle bigger ships included increasing gate capacity and introducing faster feeder services, both issues mentioned by 15% of carriers.

While carriers tended to be sceptical of

seeing any significant improvements in overall port productivity, some argued that faster working could be achieved through ports offering more stacking space and back-up equipment. However, several carriers appeared quite critical of container handling methods, with one major line noting:

	Carrier responses	
Provide more cranes/ship	77 %	
Install large/faster cranes (yard and quay)	69 %	
Increase terminal stacking capacity	69 %	
Introduce more terminal automation	38 %	
Deepen berths + channels/lengthen berths	38 %	
Develop off-shore ports	23 %	
Increase gate capacity	15 %	
Introduce faster feeder services	15 %	

"Nothing changed respect R&D last 25 years!"

... and that consequently there is now a need to:

has

"Invent new and faster ways to handle (containers), load and discharge".

(Top-10 carrier)

5. Conclusions

One could say that 'the genie is out of the bottle', as it were, with regard to ship size. Several top-10 lines clearly believe that further upsizing is going to happen. This study has found that:

- Ships offering an estimated loading capacity of 8,000 TEU are actually already in service'
- Shipbuilders are busy designing vessels of 10,000 TEU and above;
- There is no longer an engine power constraint for this size of craft; and,
- · Crane manufacturers are building handling equipment capable of working even bigger ships.

A number of factors are pressurising lines to introduce bigger vessels. The most significant factors appear to be as follows:

- As world trade continues to expand, global container traffic is expected to virtually double in the next decade and this means additional capacity is needed:
- The search for lower unit costs, resulting from a seemingly unstoppable decline in freight rates, motivates lines to build ever-larger vessels; and
- Impending replacement of outdated tonnage is expected to result in a further spate of orders for big new ships in the next few years.

Many traditional liner ports are clearly suffering from the aftershock of continual vessel upsizing and the implications resulting from this, including, in particular.

- The need to deepen and widen access channels:
- A requirement for longer berths and much greater land take, the latter subject to environmental and other constraints:
- More, bigger and faster cranes, putting

Table 10. What should terminal operators do to effectively handle shine of the next generation?

	23 %
	15 %
vices	15 %
	additional strains on existing infra-

structure; and

· Increased pressure on capacity-constrained landside transport infrastructure resulting in traffic bottlenecks.

Some ports may be fighting a losing battle. This review and analysis of the literature relating to bigger ships, coupled with findings from the top-30 carrier survey, suggest two outcomes are increasingly likely, namely:

- · Container ships with loading capacities of somewhere between 10,000 TEU and 15,000 TEU will probably enter service before 2010; and
- Such vessels, being primarily designed to serve offshore transhipment megahubs, will tend to avoid many traditional liner ports.

Inevitably this will result in a 'new world' as far as traditional liner ports are concerned. Exactly how many of these liner ports will fit into this evolving 'system' is a matter of conjecture. That they will fit into it, at least in some way, is not in doubt. One might conclude that containerisation appears to be coming of age, at last!.

Acknowledgements

I would like to express my gratitude to all the carrier executives who took the time to fill in the questionnaires for this study, and for the additional information they provided

Note: Due to the limited space available, 'References' (1-41) originally attached to the paper, have been omitted in this issue. For further information, please contact:

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INTERNATIONAL MARITIME INFORMATION

Seminar on Container Terminal in London

N international seminar will be held on Monday, November 29, and Tuesday, November 30, 1999 at Mayfair Conference Center, London, featuring latest technologies & simulation developments for "Optimising Container Terminal Layout, Logistics & Equipment Control".

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Romanian Transport Forum 16–19 November in Bucharest

HE Romanian Transport Forum, FORTRANS'99, will create a common platform for international organizations, the private sector, the public sector and NGOs to come together and discuss transport issues.

FORTRANS'99 is organised by Gestionnaires Sans Frontières Romania (GSF Romania), a non-profit organization.

The Romanian Transport Forum, FOR-TRANS'99 (1st), will be organised in the same time and in the same place with the Romanian Environmental Forum, FORM'99 (6th). Within the FOR-TRANS'99 will be presented:

- Programs of international financial institutions: UNDP (United Nations Development Programme), European Commission, The World Bank, USAID (United States Agency for International Development), etc.
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INMEX '99 Conference On October 7 and 8

Conference Objectives

n conjunction with the Exhibition (India International Maritime Expo '99), a conference will be held on 7 and 8 October 1999.

The Conference will be divided into three main segments –

Trade, Shipping and Ocean Resources Ports, Harbours and Transportation Shipbuilding

Concurrent sessions being planned on all three segments. The Conference will be held in two halls at our Official Hotel – Cidade de Goa and one hall in Goa International Centre which is located right behind Cidade de Goa. Each segment will have a keynote address followed by 9 sessions spread over two half-day sessions starting from 0930 hrs and ending at 1315 hrs with lunch.

The objective of this Conference is to focus on

- a. Refurbishing, upgrading and management of existing commercial ports and harbours (major and minor ports) and fishery harbours.
- b. Creation of futuristic commodity based ports and harbours taking into account the development of shipping, exports and imports specialised and hazardous cargoes.
- c. Modernisation and management of existing shipbuilding yards, boat yards and traditional boat builders.
- d. Handling and transportation network and support facilities for various types of cargo.
- e. Importance of the shipbuilding industry with reduction in costs and improved delivery schedules.
- f. Small craft construction, engineering,

machinery, equipment and design.

- g. Human development, skills and training for the marine industry.
- h. Exploration, exploitation of the offshore resources and development of coastal and ocean engineering – seabed mining in deep water.
- i. Inland water transport and fishing vessels.
- j. Environment, pollution prevention and treatment.
- k. Satellite communications and navigation.

Exhibitor & Visitor Profile

The prominent exhibitors who have confirmed participation include

- a. Engine manufacturers like Volvo India Pvt. Ltd., GMMCO Ltd. (Caterpillar), Wartisla NSD Corporation Ltd., Cummins Ltd., Yanmar, Ashok Leyland.
- b. All the eleven major ports through Indian Ports Association. In addition New Mangalore Port Trust, Chennai Port Trust have individually confirmed participation. Two major private ports, Adani Port Ltd., & Gujarat Pipavav Port Ltd. have also confirmed participation.
- c. Maritime boards like Tamil Nadu Maritime Board, Maharashtra Maritime Board.
- d. Major lubricant manufacturers like Bharat Shell, Mobil Ltd., British Petroleum, Hindustan Petroleum Corporation have tentatively confirmed participation.
- e. The equipment manufactures like Kamewa Ltd., Reinjtes Middle East LLC, Beacon Finland Ltd., and ship & boat building companies like Bharati Shipyard, Dempo Shipbuilding and Engineering, Vadyar Boats, Praga Marine Pvt. Ltd., Tebma Shipyard, Alcock Ashdown Pvt. Ltd. have also confirmed participation.
- f. Navigation and communication equipment manufactures like France Telecom, STN Atlas Elektronik GmbH, Bharat Electronics Ltd., Iridium LLC, VSNL, Orbit GV, Motorola Ltd., have confirmed participation in INMEX'99.
- g. From the IT Industry the software companies dealing in maritime software like NIIT, Tata IBM, Parametric

INTERNATIONAL MARITIME INFORMATION

Technologies, Intergraph Pvt. Ltd., Baan Infosystems India Pvt. Ltd., IIC Technologies Pvt. Ltd., etc. have also confirmed participation.

h. Foreign trade offices who have taken up space at the exhibition to promote various companies from their respective countries.

The visitor profile would include

- a. High level delegations from all the eleven major ports in India.
- b. Fishing trawler owners and fishing industry owners in India.
- c. Delegations from Government and private shipyards in the country.
- d. Delegations from Associations like Indian Ship Owners Association, MANSA. Through these associations we have passed on information to all the ship owners and would be inviting them to visit the show and also participate in the conference as delegates.
- e. Trade delegations from all the South East Asian countries, Indian Ocean rim countries, Coastal African and Middle East countries. We are in the process of inviting the trade delegations through the respective trade offices in their embassies in India.
- f. All state maritime boards in India under whom all minor ports come under.



World FIBC Guide 1999/2000

ILLENNIUM Conferences International organisers of the World Flexible Intermediate Bulk Container '98 Congress & Exhibition proudly announce the launch of the World FIBC Guide 1999/2000.

Nowadays FIBCs are being used throughout the world for transporting a wide range of materials, ranging from comparatively low-value products such as fertilisers, cement and clay on the one hand through to high-grade chemicals on the other.

In recent years the technology of the total FIBC system – including specialised filling and discharging equipment, as well as construction of the bags themselves – has evolved to the extent that it is now possible to handle hazardous chemicals in total safety and foodstuffs and pharmaceuticals under ultra-hygienic conditions.

The World FIBC Guide 1999/2000 will contain market information and forecasts for different continents. Illustrated with photographs and diagrams the guide will include several technical articles written by FIBC industry experts.

The Guide will be a comprehensive A-Z to manufacturers and suppliers detailing their address, telephone and fax numbers, contact details and website. It will provide you with information on production figures, available capacity and a company profile.

The World FIBC Guide will contain information on major specialist manufacturers on FIBC Fabrics, thread, webbing, inner liners, weaving machines, FIBC filing and emptying machine, etc. It will provide information and advice on safe handling of FIBC's including details of test-houses world-wide.

The World FIBC Guide will be an excellent reference source for everybody using Flexible Intermediate Bulk Containers, transport organisations and bulk logistics operators and those contemplating the use of FIBCs for the first time.

The World FIBC Guide 1999/2000 will be available in October 1999 and priced at UK£85.00/US\$150.00 (including postage & packaging).

For more information please contact: Peter van Schie, Project Manager.

Email peter.van_schie@virgin.net

Container Top Safety: Lashing and Other Related Matters

HE TT Club and the International Cargo Handling Co-ordination Association (ICHCA) have once again joined forces to publish a research report, this time on container top safety. The paper, entitled Container Top Safety: Lashing and Other Related Matters takes a firm stance on the safety issues of today's container securing working practices.

Although future developments in the industry could change working conditions for stevedores, the latest ICHCA survey on the subject found that at the moment, all workers performing container securing work on top of containers are subject to potential hazards. The report states:



The safety issues of today's container securing working practices are featured in a TT Club- ICHCA report.

"It is essential that safe systems of work are developed and used when such work is necessary in order to protect workers from the obvious severe hazards, including that of falling."

The report goes on to say that the fact there have been surprisingly few reported fatal or serious accidents to individuals working at the open edges of the tops of containers is no justification for failing to take action to protect workers from the obvious hazards.

"The best way to deal with a hazard is to eliminate it at source. In the context of container top safety this is at the design stage of ships and containersecuring equipment."

ICHCA and the TT Club recommend that all terminals and employers should envelop a strategy to deal with the problems of ensuring the safety of those working on the tops of containers, both in the short and long term. It is also advised that in the short term, employees should only work on the top of containers on ships from inside a cage or, if they cannot do so, they should work connected to an appropriate safety harness with a lifeline to a cage, spreader or other suitable anchorage point. However, long-term measures, says the report, need to be markedly more drastic;

"It is strongly recommended that terminals should include consideration of elimination (or at least significant reduction) of the need for container top work."

The report also advises terminals to consider the implications of the

International Maritime Organisation's Maritime Safety Committee circular MSC/Circ.886 in discussion with their shipping company customers. The circular, issued by IMO in January this year, also recommends the elimination of container top work on ships. For their part, shipowners and those responsible for the design and construction of ships should also take MSC/Circ.886 into account when drawing up specifications for new ships.

Container Top Safety: Lashing and Other Related Matters has been written by three leading industry specialists: John Alexander, who worked for HM Factory Inspectorate and the British Health and Safety Executive for more than 36 years; Mike Compton, chairman of the ICHCA Safety Panel who was awarded the MBE for services to dock safety in 1977; and Jan Wubbeling, currently manager of Safety, Health and Welfare Policy at Europe Combined Terminals (ECT), Rotterdam, where he has worked for more than 20 years.

International initiatives relating to container top work include ILO Convention 152. According to the report, the number of countries that base their legal requirements relating to dock work on this convention is increasing and will continue to do so. Therefore, it is in the interest of both terminals and vessel owners to get their operations soon as possible.

* * *

The TT Club provides liability and equipment insurance to ship operators, stevedores, terminal and depot operators, port authorities, freight forwarders and other transport operators in more than 80 countries. The Club insures over 2/3 of the world's container fleet, 1,150 ports and terminals worldwide as well as 5,636 intermodal operators around the globe. The Club's directors are drawn largely from the membership and have significant experience within the transport industry.

ICHCA is an independent, non-political international membership organisation established in 1952, whose membership spans some 85 countries and comprises corporations, individuals, academic institutions and other organisations involved in, or concerned with, the international transport and cargo handling industry.

* * *

Copies of Container Top Safety: Lashing and Other Related Matters as well as other safety and loss prevention guides are available from ICHCA, 71 Bondway, London, SW8 1SH. Tel: +44 171 793 1022, Fax: +44 171 820 1703

For further information, please con-

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E-mail: info@dunelmpr.co.uk

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The Americas

Vancouver Port Focuses On Y2K Readiness

HE Vancouver Port Authority (VPA) announced that it has completed key components of its Y2K readiness program. The program included an examination of VPA's overall exposure to Y2K, creation of compliance procedures for vessels entering Port Vancouver and assurance from the Port's major marine facilities on their Y2K readiness.

"Succeeding in the global marketplace during the transition of the new millennium is dependent on Y2K readiness. The analysis we undertook of the Port's exposure to Y2K-related impacts has indicated that our exposure is minimal. However, we recognize that Y2K planning is a dynamic process and therefore we must continue to strive to improve our readiness," sand Norman Stark, VPA President and CEO.

The majority of Port Vancouver' terminals, marine carriers and suppliers along with the Authority have had active Year 2000 programs for the last few years. The VPA together with the Canadian West Coast Port Authorities have created mandatory Year 2000 Harbour Operation Procedures which are currently being issued to all shipping lines calling on B.C. The procedures include a compliance checklist to: 1) verify that the ship's steering and propulsion systems have been tested 2) confirm that personnel are prepared to manually control these systems 3) assure that communications, anchoring and tow lines are ready in the event of a problem during the roll-over to Y2K.

"Our message to the shipping community is clear. Port Vancouver will be open for business. Between 0001 PST December 15 and 0001 January 15, 2000 we will expect ships to be ready to take immediate action in the event of a problem with their steering and propulsion systems during the Y2K roll-over", said Christopher Badger, VPA harbour master. The VPA has worked

extensively with other West Coast ports along with the Chamber of Shipping, Transport Canada and Vancouver Traffic Services to ensure full interagency communication and organization during the Y2K transition.

"As Canada's largest and busiest port, we are striving for a smooth transition in order to continue to offer our customers efficient and competitive service levels along with facilitating operations that are safe and environmentallysound for our neighbours, the eight municipalities that border the Port," said Stark.

For more information, please contact:

Linda Morris

Director, Public Affairs Vancouver Port Authority Tel: (604) 665-9069 Fax: (604) 665-9073 Cell: (604) 377-3532 linda.morris@portvancouver.com

Vancouver: Cruise Strong, Forest Products Rebound

ORT Vancouver handled 36.1 million metric tonnes during the first two quarters, a two percent decline over last year's figures, according to statistics released by the Vancouver Port Authority (VPA). Containers and cruise continued their strong momentum in the first half of 1999.

"Port Vancouver is on its way to

being Canada's largest Container Port, with mid-year container volume jumping 44% over last year's figures to 526,841 TEUs. The Port is expected to handle one million TEUs by the end of 1999. On the import side, strong consumer demand has pushed full inbound container traffic up 23 percent to 174,053 TEUs. Full export container traffic saw a 59% increase to 265,409 TEUs largely due to competitive rates by container lines and a favourable Canadian dollar. Strong container traffic through the Port is complemented by the recent addition of three lines, making Port Vancouver their 'first port of call' and offering regular service to the U.S. midwest", said Norman Stark, VPA President and C.E.O.

"The Vancouver-Alaska cruise continued to grow, posting an impressive 7% gain over last year's numbers for a total of 346,119 revenue cruise passengers. Strong tourist dollars, competitive pricing by the cruise lines and full vessels kept this sector on track with continued growth. With a 4% increase in the number of vessel calls over last year, we want to reaffirm the Port's commitment to construct a third cruise berth for the 2004 cruise season", said David Stowe, VPA Chair.

Overall forest products volumes have rebounded with a 27% increase to 3.9 million metric tonnes over last year's numbers due to a steady recovery in the Asian economies. Lumber traffic grew by 41% to 981,000 metric tonnes while wood pulp rose by 24% to 1.8 million metric tonnes compared with the same period last year.

Chemical volumes grew by six percent to 1.3 million metric tonnes over last year's figures. Conversely, petroleum products decreased by 43% to 1.3 million metric tonnes, largely due to low offshore prices and increased competition from alternate suppliers.

Dry bulk volumes slipped marginally by 4% to 25.7 million metric tonnes over last year's numbers. Grain decreased by 5% to 5.5 million metric tonnes, due to smaller crop volumes last year. With market slowdowns in Asia, coal was down slightly by 3% to 13.7 million metric tonnes. Potash declined by 6% to 2.1 million metric tonnes while sulphur registered a five percent drop to 2.6 million metric tonnes.

Port Vancouver is Canada's largest and most diversified port, trading more than \$30 billion in goods with more than 90 nations.

'Sheba' Sets Record in Transpacific Crossing

rasia Lines' Norasia Sheba, a 1,400 TEU container ship, has set a new Pacific Crossing Record departing from Hong Kong on July 5 and arriving in Vancouver 10 days, 4 hours and 25 minutes later on July 15, 1999. The vessel called the ports of Keelung and Busan enroute and the transit time from Keelung and Busan was nine and seven days respectively.

This sailing is the fastest known transpacific crossing by container vessel.

The vessel is part of the Norasia APX service across the Pacific serving the Pacific North West and the US Mid West as a weekly call at Deltaport in Vancouver, B.C. This is a six vessel service of the same class of vessels capable of 25 knots of service speed.

Sister ship Norasia Samantha is following the Sheba and at the time of this writing was on course to make the crossing nine hours faster than the Sheba.

Latest VTS Technology For Canadian Coast Guard

OFRELOG is pleased to announce the award of a contract to design, and install an advanced radar tracking and display system. This system will be used by the Canadian Coast Guard for VTS (Vessel Traffic Services) operations at the new Victoria MCTS Centre (Marine Communications and Traffic Services) on Vancouver Island B.C.

The system will enable the Centre to monitor vessel movements over more than 1,500 square miles of Canadian and US waters in the Straits of Georgia and Juan de Fuca. This includes vessel traffic enroute to the ports of Vancouver, and Seattle as well as cruise ship traffic, the important logging business and other routine traffic.

"Area weather is frequently very windy. Tides in opposition to these winds can create disturbed wave patterns and radar clutter, which is challenging for mariners and centre officers. We wanted a system, which would reliably track targets despite these high clutter conditions. The SYTAR system has demonstrated its ability to provide the level of performance we need", said Jeff Jenken, Canadian Coast Guard, Project Officer for the new Centre. He continued, "In addition, the SOFRELOG technology will help reduce overall system life cycle costs."

The Victoria MCTS system will employ SOFRELOG'S SYTAR technology (System for Tracking Administration and Routing) which uses computer software to detect, track and display vessel movements based on radar information. Four existing radar sensors, some separated by more than 60 km, will be connected to the SYTAR network via narrow band links. Where radar coverage overlaps, Control Officer's will be able to merge multiple radar information into a single presentation. The MCTS Centre located in Pat Bay will be equipped with radar remote control capabilities, radio direction finders, and a precise time synchronization source. The system will also provide archiving capability for post incident analysis, training, as well as interfaces with the existing database management system (VTOSS), and equipment for radio channel audio recording synchronization. The system will be designed for future expansion as well as upgrades to meet new international transponder standards (UAIS) which are currently in development.

SYTAR has been installed in a number of prominent port and waterway systems. Among these are the Ports of London in UK, Marseilles, Tunis, Calais, Dakar in Senegal, Abidjan in the Ivory Coast and Cotonou in the Benin Rep. In cooperation with port authorities, the Ports of Rouen and Bordeaux pilot associations are using SYTAR for pilotage assistance. In addition, SYTAR is used by The Royal Danish Navy for coastal monitoring, the Kiel Canal in Germany for lock control, as well as multiple stations on the Dover Strait.

SOFRELOG is a High Technology company with principle offices in France and the United States. The company installed its first Vessel Traffic Services system in 1993, based on experience in the field of software real-time processing for government agencies. In addition to VTS, the company offers systems for software simulation and testing, as well as components for digitizing wide-band analogue data and placing it on computer networks.

Founded in 1987, SOFRELOG (www.ourworld.compuserve.com/homepage/sofrelog) is an employee owned high technology company, which employs more than 70 engineers, service and administrative personnel. Principle customers are port and waterway authorities, coast guards and other govemment agencies as well as commercial companies.

Long Beach: Container Volume Up 19% in May

ROPELLED by a surge in imports, total cargo container volume at the Port of Long Beach rose 19 percent in May compared to May 1998. The equivalent of 394,467 containers was shipped through Long Beach – the nation's busiest container port. The May total is the highest monthly total in port history, surpassing the previous record of 378,714 TEUs in July 1998.

The gains in May stem from unexpectedly strong consumer spending in the United States.

"Merchants started ordering again in May after a cutting back orders in March and April," said Hal Hilliard, the port's marketing manager. "They found themselves short on inventory, and now they're replenishing their supplies. A great many are also beginning to order for the upcoming Christmas holiday season."

Imports at the port increased 25.7 percent in May to a record 205,640 TEUs. Long Beach is the leading port of entry for Asian-made products such as clothing, toys, shoes, furnishings and electronics goods.

Exports improved after tumbling in April, rising 3.8 percent in May to 87,553 TEUs. Except for a disappointing April, exports have improved slightly in recent months, halting last year's slide and signaling a possible rebound in Asia. Thus far, however, the gains in exports have come largely in shipments of U.S. raw materials.

The number of empty containers shipped through Long Beach, virtually all headed to Asia, was also a record, climbing 21.1 percent to 101,274 TEUs. Several chartered vessels came in May to take entire shiploads of empty containers back to Asia.

Port of Long Beach Container Traffic (TEUs)

	LOADED		TOTAL	EMPTIES	TOTAL	
	Inbound	Outbound	LOADED		CONTAINERS	
May-99	205,640	87,553	293,193	101,274	394,467	
May-98	163,640	84,381	248,021	83,598	331,619	
% change	25.7%	3.8%	18.2%	21.1%	19.0%	
Jan-99	169,397	77,676	247,073	72,239	319,312	
Feb-99	172,482	80,000	252,482	71,647	324,129	
Mar-99	171,913	88,699	260,612	87,362	347,974	
Apr-99	181,575	77,040	258,615	81,071	339,686	
May-99	205,640	87,553	293,193	101,274	394,467	
Year-to-date	901,007	410,968	1,311,975	413,593	1,725,568	
% chang	15.5%	0.3%	10.2%	10.0%	10.2%	

heritage association's president and a long Beach Heritage member. "The historic Naval Station has been demolished but we feel that a lot of public benefit will come from this fund."

The group's intent is to use only the interest earned each year so that historic preservation grants can be awarded indefinitely, said Latimer. The memorial heritage association has obtained its tax-exempt status, and it plans on issuing its first grant next year.

Under last year's agreement, the port placed the \$4.5 million into an escrow fund when it began redeveloping the Naval Station. When the port demolished Pier 7 at the Naval Station in mid-July, completing the razing of the former Navy facility, the money was transferred to the memorial association.

The port is building a 200-plus-acre container terminal. Since the beginning of the year, it has awarded contracts for a new wharf, grading and the installation of utilities for the new terminal.

In addition to the preservation fund. the port has taken several steps to memorialize the Naval Station. Architectural drawings for the Navy buildings will be preserved at the National Archives facility in Laguna Nigel, with copies going to the Historical Society of Long Beach. Historic photographs of the Naval Station are going into the Special Collections at California State University, Long Beach. The port also is preparing an exhibit, including a threedimensional model of the Naval Station, and a video documenting the architecture and history of the facility.

Long Beach Port Funds For Preservation Projects

HE Port of Long Beach has completed demolition of the former Long Beach Naval Station, triggering the transfer of \$4.5 million in preservation funds from the port to the Long Beach Navy Memorial Heritage Association. The funding fulfills an agreement reached last year by the port, Navy and preservation groups, clearing the way for construction of a shipping terminal at the former Navy site.

Under the accord, the non-profit Navy heritage association is to use the money

for "fostering and supporting the identification, evaluation, preservation, rehabilitation, restoration and interpretation of historical resources" within the city of Long Beach.

The board of directors of the newly formed association consists of two members from Long Beach Heritage, two from the Wilmore City Heritage Association, two from the Historical Society of Long Beach and three members from the city's Cultural Heritage Commission.

"This fund was arrived at after several years of thoughtful consideration by the port, Navy and preservation groups," said Nancy Latimer, the Navy

Long Beach: Danish-built Mega-ship's US Debut

HE Susan Maersk, the largest container ship ever to call at U.S. port, arrives on Saturday, June 19 at the Port of Long Beach. Nearly four football fields long, wider than the Panama Canal and standing 12 stories tall, the Susan Maersk can carry 6,600 20-foot-long cargo containers, where previously the largest vessels carry 6,000 containers.

The Danish-built vessel is scheduled to dock at 9:15 a.m. at Maersk's Pier J terminal in Long Beach. The *Susan Maersk* will be in Long Beach through Monday, June 21.

Grand Alliance Picks Seattle as Its US Gatway

HE Grand Alliance, one of the world's largest shipping groups, has announced it will use the Port of Seattle as its gateway for U.S. exports to Asia on a new weekly service that will be called the China Korea Express. The decision comes just as some trading partners in the region, particularly South Korea, are showing increasing signs of economic recovery.

The Grand Alliance, whose partners include Orient Overseas Container Line Ltd. of Hong Kong, P&O Nedlloyd of London, Hapag-Lloyd AG. of Hamburg and Nippon Yusen Kaisha (NYK) of Tokyo, said it will use five 2,700-TEU (containers in twenty-foot units) ships for a fixed-day weekly service calling Hong Kong, Shanghai, Qingdao (China), Pusan (South Korea), Los Angeles, Seattle, Pusan and Hong Kong. The service will call at Terminal 18, which is operated by Seattle-based Stevedoring Services of America. The first ship in the new service, the P&O Sydney, will arrive at the Port of Seattle on Aug. 19.

The Grand Alliance partners already operate at the Port of Seattle, offering two first-port-of-call services from Hong Kong/Japan and Hong Kong/Kaohsiung (Taiwan), and one last-port-of-call service to Japan from Terminal 18. Together, the four steamship lines represent one of the Port's largest customers.

The new Grand Alliance service would be the fourth this year offering a new Trans-Pacific trade connection through Seattle and shows the Port is capturing a growing share of the flourishing Pacific container trade.

Earlier this month, Australia-New Zealand Direct Line (ANZDL) announced it will launch a new service connecting Australia and New Zealand to the Port of Seattle. In April, ZIM Israel Navigation Co. and Far Eastern Steamship Co. (FESCO) announced that they will use the Port as their pacific Northwest call on new Trans-Pacific services.

Together, the four new services will add significant volume to the Port of Seattle's container trade and help support family-wage jobs on the waterfront, said Mic Dinsmore, Executive Director of the Port of Seattle. He said the new services also endorse the Port's continuing investments in expanding and improving its marine terminals.

Trade in Full Containers Rises 6% at Seattle

HE Port of Seattle announced its volume of full cargo containers

rose 6 percent in May to 99,777 TEUs from 94,041 TEUs during the same month in 1998.

So far this year, the Port's total container volume is up 6 percent. Year-todate through May, the number of containers rose to 631,188 TEUs from 593,203 TEUs during the first five months of 1998.

Imports from Asia during the first five months of the year rose 16 percent to 230,083 TEUs from 199,060 TEUs. Exports to the region, which has been showing signs of recovery since the beginning of the year, rose 4 percent to 167,229 TEUs from 160,419 TEUs through May of 1998.

The month of May was marked by the departure of Hyundai Merchant Marine. The South Korean shipping line ranked as one of the Port's largest customers. Since the beginning of 1999, however, four new or existing customers have announced the launch of new Trans-Pacific services at the Port of Seattle. This new container business and anticipated growth from other steamship lines are expected to make up for much, if not all, of Hyundai's former volume through Seattle this year.

The new services are being launched this year by Far Eastern Steamship Co., ZIM Israel Navigation, Australia-New Zealand Direct Line and the Grand Alliance (Orient Overseas Container Line, P&O Nedlloyd, Hapag-Lloyd, Malaysia International Shipping Corp. and Nippon Yusen Kaisha). The latter group already is one of the Port's largest customers.

Stockton Port Director Announces Retirement

ORT Director Alexander Krygsman officially announced his retirement as of June 30, 1999.

Krygsman has been Stockton's Port Director since



1977. During his tenure the Port of Stockton has developed into a major seaport that connects California's Central Valley with worldwide commerce.

Most noteworthy of his many accomplishments during his tenure includes the deepening of the Channel to a depth of 35 feet, which allows large vessels up to "Panamax" class (these are the largest vessels that can transit the Panama Canal), the acquisition of three large gantry cranes with flexible cargo handling capabilities, utilization of over 3 million square feet of warehousing at 100% capacity, with only a few of the Port's current 600 acres remaining available for development.

He also leaves a legacy that includes a new national distribution center operation as well as a myriad of cargo handling facilities. He was instrumental in coordinating the special legislation that will eventually convey the former Naval Communications Station at Rough and Ready Island to the Port of Stockton.

In announcing his retirement, Krygsman said with the assistance of a dedicated staff, a good foundation has been established for the future and that it's time for him to step aside.



Besides ensuring awareness, the

Also we have taken stock of our embedded systems and conducted the

equipment at the container terminal. At

the same time, in conjunction with

KCCT, we have requested Y2K SOLU-

TIONS AFRICA to check on our mission

critical systems to verify the compliance

status. Plans to this end are at

that conversion of our in-house devel-

oped systems is now complete. These

Equally important to note is the fact

In order to meet our target by ensur-

ing that everything is compliant we

have put a schedule in place which we hope we will follow religiously as long

as other crucial factors remain constant.

Tentatively, the schedule is as follows:-

advanced stages.

systems are:-

Personnel

Import Billing

Export Billing

Manifest and

Harbour Masters

Payroll

evaluation to determine their state of compliance.

At the moment there is the remedial action and contingency planning exercises going on and the stipulated deadline has been set for 31 of August 1999.

We have worked on a flexible budget within which the problem can be addressed. We have also contracted our most important suppliers and requested for a certificate of Y2K compliance as regards the machines they have supplied us plus the ones they intend to sell to us in future.

The KPA has set up a Y2K implementation team whose members are drawn from all departments after undergoing rigorous training on how to tackle the Y2K issue.

We have held discussions with ABB (asea Brown Boveri Ltd) who are the suppliers of some of the embedded systems used by some operational equipment. We are soon to finalise with them on how they can up-grade some of the

Task	Task	End
Checking & Upgrading Embedded Systems	1.3.99	30.7.99
Conversion of in-house systems complete	30.3.99	30.5.99
Purchase of operating systems	15.7.99	30.7.99
Purchase of PCs (High risk)	1.7.99	15.8.99
Purchase of Hardware equipment	1.8.99	30.8.99
Visiting/checking with customers/suppliers	1.7.99	20.8.99

(Information dated 24 June 1999 from Bernard Osero, the KPA Y2K Implementation Committee)

Port of Le Havre: Rail Connections for Port 2000

ITHIN the scope of the Port 2000 project, the study agreement signed on 21 December 1998 between SNCF (The French Railways), Réseau ferré de France (RFF) and the Port of Le Havre Authority aims to complete the study of the rail connections for Port 2000 and the Le Havre industrial-port zone.

Rail transport is the privileged mode to increase the attractiveness of the port of Le Havre on the land hinterland beyond the great Paris area. Its development, which both generates and depends on the traffic growth and the size of the ships calling in at the port of Le Havre, will go together with that of Port 2000. The forecasts expected by the year 2010 or so are thus the trebling of the number of containers carried by rail. Container trains would be multiplied by 2.5, owing to mass transport; today, they only account for 13% of the rail traffic to Le Havre.

The critical study of the existing railway system emphasises its complexity and the risk of near saturation. The connections to and from Le Havre are indeed based upon the Soquence rail network which dates back to 1925 and was designed to serve the port facilities of that time, located westward.

The main elements which make that the tool is not adequate with regard to the expected developments are as follows:

- the transfer of the business to the South and the East (industrial-port zone) brings about a contra-flow use of Soquence, which leads to numerous waiting times and congestion of the site.
- the length of the rail tracks (between 420 m and 700 m) limits that of the trains and hinders the objective of mass transport,
- the location of the container terminals in dispersed points of the port implies the making-up of trains through the

procedure of marshalling, which takes a lot of time.

In order to achieve that the rail system be fully appropriate for long to the success of Port 2000, it is absolutely necessary to develop infrastructures and operating procedures which allow both to rationalise the services to the terminals and to move from a freightcar management to a lot management, or even a train management, which would reduce the halfway changes.

In order to meet these objectives, new infrastructures are planned to cover the immediate service links (to and from the container terminals), the close connections (crossing of the alluvial plain and connection with the main network) and the distant connections (linking Le Havre with its hinterland).

- the immediate service links:

It is imperative to rationalise the connections with the container terminals, that is the reason why SNCF recommends to tend towards a design of single rail yard to allow in the long term to send and receive container trains without halfway changes in their make-up.

In order to do so, it is adequate to organise the loading of the containers on a lot of freightcars having the same destination: the lots will then be grouped together and made up on the present yard of the alluvial plan to get a train which can rapidly leave to join the main network and vice versa.

- the close connections:

Five basic scenarios structured on new infrastructures or requiring the adaptation of the existing infrastructures were studied in the first place:

- Construction of a viaduct in la Breque, to connect the Bridge 7a (Pont 7bis) to the main railway line. This scenario does not bring along a solution in the short-term.
- Creation of a new route linking Bréauté via Tancarville and the Vallée du Commerce. This scenario has the great disadvantage of presenting a single-track route with a steep slope (gradient of 1.7% against 0.8% in Harfleur) which reduces the maximum load of the trains and prohibits the trains from being pulled by one single engine.
- Construction of a Tunnel through the limestone plateau. This project was given up owing to its high cost.
- Adaptation of the rail route crossing the lock François I. This scenario is particularly penalising for port operation because of the room it will take in the very site of the North terminals

and because of the constraints related to the high maritime traffic passing through the lock François I.

- Upgrading of the route which allows to link Soquence with the alluvial plain via the Pont Rouge bridge and the Pont 6 bridge. This scenario alone does not bring the necessary reliability as it is very dependent upon the movable bridges of the port.

The study also looked into the possible options including the shortening of the rail loop through the alluvial plain as well as new railway lines north of the nature reserve.

At the end of this assessment phase, the Steering Committee of the Study selected a mixed solution between the Pont 6/Pont Rouge bridges and La Breque scenarios. This solution will make it possible to separate the flows in and out the alluvial plain to avoid the full congestion of Soquence East in the short term. The direct connection with La Breque allows the trains to leave and join the main network from the Alluvial Rail Network (same for the arrivals). This network becomes the grouping and dispatching place for the flows of the North and South terminals. The North containers participate in the consolidation and are linked with the Alluvial Network via the upgraded route (Pont Rouge Bridge).

It will be possible to carry out these developments in three stages:

Stage 1 made up of two lots:

- As soon as Port 2000 is operational, upgrading of the section Pont 6 bridge/Pont Rouge bridge and Pont 7bis bridge/Alluvial Network.
- 2. 2003/2005: creation of the direct connection with La Breque and additional equipment for the making up of trains in the Alluvial Network with electrification of the route between the railway line Paris-Le Havre and this network.

Stage 2 depending on the traffic growth actually noted (2009):

- Upgrading of the Lafarge/Port 2000 section with setting-up of an automatic block and a remote control of the routes.
- Doubling of the MAPROSOL/Port 2000 railway route.

Stage 3 after 2010 depending on the traffic growth noted:

- Doubling of the Pont 7bis (Bridge 7a)
- Electrification, if necessary, of the Lafarge/Port 2000 section.

- the distant connections:

The compatibility of the development of the rail flows generated by Port 2000 with the importance of the passenger traffic on the Le Havre-Paris railway line, in the Rouen/right bank station and in the Paris suburbs, was considered.

Recent studies, especially that conducted by the DRE (Public Works Regional Division) of Upper-Normandy on the outer by-passing of the Ile-de-France region for the freight, bring answers to this issue. They recommend:

- to keep the traffic on this main route and on the Outer circle of the Paris Region (the most high-performance route for a great number of regions),
- the upgrading of the North Bypass Line (Amiens, Tergnier, Chalons en Champagne, Culmont-Chalindrey), in order to facilitate the connections by full trains to the East of France and beyond, and allowing to create rail routes with priority to freight; and
- the upgrading of the rail section from Motteville to Montérolier-Buchy which would make it possible both to extend the time allowed to receive and run trains while avoiding the constraints of the Rouen rail node and to bring flexibility and the security of an additional access to the Le Havre zone.

Port of Cork 2000 Garden For New Millennium

HE Port of Cork will mark the dawning of a new Millennium with the construction of a new, visually attractive amenity at the Tivoli Industrial & Dock Estate.

Situated at the water's edge at the western end of the Estate, the Port of Cork 2000 Garden will afford excellent views up river towards the City and downriver towards the Marina and Blackrock. There will be a central path running the length of the long, rectangular site and at both ends there will be a pair of modern wrought iron gates. Attractive seated areas will be an important feature of the Garden with some such areas on the river's edge surrounded by hedges and railings while others will be screened using stone walls and colourful shrubs.

Distinctive features of the Garden will include

- A sunken paved area with seating containing a centre piece of a marble sculpture depicting a fish swimming under water.
- A sundial on a base of Liscannor paving.
- Circular stone pillars linked with chain and with climbing plants trailing from one pillar to another.
- The coat of arms of the Port and City depicted in cobbles with "Millennium 2000" picked out in creative stones surrounded by contemporary planting.
- Lighting accommodated in stone bol-



lards.

• Special features commissioned from local sculptors placed at regular intervals apart from the seated areas.

Work has already commenced on the project and is due for completion by January 2000. Distinguished landscape designer Mr. Brian Cross is the designer of the Garden while other contractors include Pat Sullivan Garden Services, Nangles Nurseries and Whelkans Limestone.

In announcing the Port of Cork 2000 Garden Mr. Frank Boland, Chairman, Port of Cork Company, said that residents in Tivoli, Lower Glanmire Road and Blackrock would be particular beneficiaries of this unique and visually attractive development which adjoins the Port's vibrant container and general car go operations. Mr. Boland said that the development was in keeping with the Port's mission statement which commits the Port

"To promote and foster good relationships with community organisations in the harbour area.

To protect the quality of the environment influenced by port operations. To take necessary environmental planning and management measures."

PSA to Develop, Operate Sines Container Terminal

HE Government of Portugal through its Administracao do Porto de Sines SA (APS) - the Administration of the Port of Sines which is the equivalent of its Port Authority, signed an agreement with Singapore's PSA Corporation Ltd, in Lisbon, Portugal, on 24 Jun 99. The signing was witnessed by His Excellency, the Prime Minister of Portugal, Antonio Manuel de Olveira Guterres and Dr Yeo Ning Hong, Chairman of PSA Corporation Ltd. This agreement forms the basis upon which the concession will be awarded by the Government of Portugal, to PSA, to develop, operate and manage a deepsea container terminal - Sines Container Terminal (Terminal XXI) - for an initial period of 30 years. Mr Eugenio Fialho Borralho, President of APS, and Mr Khoo Teng Chye, Group President of PSA Corporation, signed the Agreement of Principals for the Sines port project.

"I wish the greatest success for PSA Corporation in the development of Terminal XXI. Your success will also be the success of APS. I strongly believe in the success for Terminal XXI," said Mr Borralho, President of APS.

Dr Yeo Ning Hong, Chairman, PSA Corporation Ltd said, "We are very pleased and honoured that the Portugal Government and the Administration of the Port of Sines have chosen PSA Corporation to be part of this container port development project. As Portugal's future container hub port, Sines Container Terminal (Terminal XXI) faces the Atlantic Ocean and has naturally deep berths to cater for very large container vessels. Its integration into the pan-European multi-modal transport network, and its position as a European Union member also means that it has unrestricted access into the vast market of continental Europe. PSA is committed to share its experience, technology and operational know-how in port development, and container-handling operations with our Portuguese port management. With the support from the Portugal Government, APS and the local business community, we are confident that Sines Container Terminal (Terminal XXI) will rise as the most efficient and sought-after deep-sea container terminal in the Atlantic Ocean serving the European markets and globally."

The Port of Sines, which started operations in 1978, is able to accommodate vessels which require deep drafts. As Portugal's leading bulk port, Sines presently has 4 terminals and handles more than 22 million tonnes of solid and liquid bulk cargoes, such as crude oil, petrochemical and refined products, bulk cargo and coal.

Located in Portugal about 170 km by modern highway to the south of Lisbon, Sines Container Terminal (Terminal XXI)'s strategic location at the cross-roads of the two vital transoceanic shipping routes of North-South and East-West means that Sines can be used as a transhipment hub for container transfer between the East-West and the North-South service routes.

Sines Container Terminal (Terminal XXI) will lies strategically at the intersection of the East-West and North-South shipping routes.

The masterplan for the Sines Container Terminal (Terminal XXI) will provide for 3 main line deep-sea berths of total quay length of about 940 metres. The draft of these berths ranges between 16 and 17 metres. The total terminal capacity will be about 1.4 million TEUs when fully completed. It is targeted that the first berth of length 320 metres will be completed in about 3 years' time.

The Port of Sines, situated within the commercial and industrial hinterland, is supported by an excellent infrastructure with extensive land transport network to Lisbon, Madrid and the rest of Europe.

Spain to Offer More Meteorological Info

HE Ministries of Development and of the Environment, through their corresponding organisms, Puertos del Estado and the National Institute of Meteorology respectively, have reached an agreement of collaboration in order to coordinate and complement the resources managed by each, with the aim of providing a more complete, rapid and efficient maritime meteorology service.

This agreement is the first step taken in Spain to offer such a public service in maritime meteorology and observation of the marine environment, essential for the sustainable development of socio-economic activities along the Spanish coast and adjacent waters, as well as for human safety at sea and also of great importance for port activities, maritime shipping and leisure craft.

Both organisms will continue to collaborate on research and technological development, as the way forward in the observation of the marine environment and maritime meteorological forecasting.

The meteorological information which the National Institute of Meteorology has been providing regularly is to be enhanced with the information that Puertos del Estado uses and develops in its research programs in maritime climatology and marine environment monitoring, useful for port operations, infrastructure works and environmental protection.

The research programs carried out at Puertos del Estado provide numerical models to help with the forecasting of waves and sea levels along the Spanish coast, as well as offering meteorological and oceanographic

data in real time, transmitted via the INMARSAT-C satellite, and which proceed from the measurement network operated by Puertos del Estado.

The data collected by high-tech buoys is transmitted every hour, via satellite, to the Control Centre in Madrid, reaching the user in real time.

The products traditionally offered by the National Institute of Meteorology include shipping forecasts in Spanish maritime areas, both Mediterranean and Atlantic, and for coastal areas: storm warnings, general situation, evolution and prediction. Also available will be wind and wave prediction models, including: maps and tables for ports with a range of up to 72 hours, verification of forecasts using data collected by the measuring network, and historical information with graphs and maps for the last ten days as well as the data collected by the measuring network provided in real time.

This information can be accessed directly and free of charge on the following web page www.inm.es.

The State Society for Maritime Safety and Salvage will distribute the information provided through its own channels (radio transmissions through coastal radio stations, Telefonica Maritime Service, VHF transmissions, NACTEX transmissions, etc.

PassengerCruise Terminal At Göteborg City Centre

HE Port of Göteborg will create a new combined passenger/cruise terminal at its Free Port, just opposite Göteborg's city centre. The terminal will be the base of the DFDS Seaways' Göteborg-Newcastle (UK) service as well as cruise ships using Göteborg either as a wayport or as a turn-round port.

The terminal will be built around an existing cargo warehouse, Shed 107. Built 50 years ago for conventional cargo handling and storage, the shed has lost its original purpose but lends itself ideally to be re-built into a passenger terminal.

The Free Port no longer has any direct deep-sea conventional liner services. On the other hand, the Port of Göteborg has a need for more space for its Skandia container and car terminals. Today, the DFDS Seaways terminal and the car terminal at the Skandia harbour share partly the same areas.



Shed 107 at Göteborg's Free Harbour is to be transformed into a cruise and ferry terminal. The former cargo shed is opposite the city centre, with access within 500 yards to the Swedish motor-road system.

The future Shed 107 terminal would solve this problem.

The benefits for DFDS Seaways of having a passenger terminal opposite the city centre would be one of easy access for passengers and cars, a traditional harbour environment and, possibly more of a city promotion point, a city sightseeing element during arrival and departure. The combined passenger-cruise terminal will have its road access separated from the cargo flow. The complete renewal and adaptation of Shed 107 and the adjacent berths will cost the equivalent of £4 million (US\$6.5 million), roughly half of which will be invested by the Port and the rest by a company set up for the purpose.



Port Co-operation on Sweden's West Coast

HE west Swedish ports of Göteborg, Uddevalla and Varberg have signed a letter of intent regarding future co-operation.

Together, the ports of Göteborg, Uddevalla and Varberg will be able to

offer a full range of port services. They will also have a stronger platform when promoting common matters, for instance, an improved infrastructure.

Different specialities

The three ports have different specialities. Göteborg is the leading Nordic port for containers and other unit-load traffic and also ex-works vehicles and oil. Uddevalla and Varberg are both geared to bulk and project cargoes as well as forest products and conventionally-handled cargo. They differ in catchment areas, though, Uddevalla looking towards mid-Sweden and northern Sweden, and Varberg towards south Sweden.

West Sweden Seaports

When acting together, the ports will do so under the name West Sweden Seaports. Apart from being able to offer a full range of port services, the ports will benefit from the co-operation in fields such as technical development, professional training, and environmental issues. Also, the ports will promote shipping generally as an efficient and environment-friendly mode of transport.

The co-operation between the three ports will not mean a merger or the setting up of a joint company. Each of the three ports will continue as an individual port, but now being able to offer a wider range of services.



The picture shows the heads of the three ports at the launching of the co-operation: left to right Mr Gunnar Nygren, Port of Göteborg AB, Mr Ulf Levin, Uddevalla Hamnterminal AB, and Mr Torbjörn Wedebrand, Terminal West AB (Varberg stevedores).



reductions in accord with the Victorian State Government's current Port Pricing Order. The 1999/2000 price reductions will result in estimated sav-

The latest round of price reductions include a 21.5 per cent cut in wharfage charges on full international containers and a 15.25 per cent cut on break-bulk cargoes (motor vehicles, iron, steel, forest products and the line).

MPC Chief Executive Jeffrey Gilbert said: "We are committed to developing the break-bulk and motor vehicle markets. The Corporation believes these pricing incentives will further enhance the growth of these market segments".

In a significant concession to shipping lines, wharfage charges on empty containers will be eliminated. Wharfage charges on full containers will be standardised at \$25.90 per TEU across the port, providing greater consistency and fairness. Wharfage on break-bulk cargoes will now be levied at \$1 per ton.

Mr. Gilbert went on to say: "The magnitude of these reductions is sure to delight port users and shock Melbourne's competitors. Melbourne already has Australia's lowest total port and related charges per container. These latest reductions will enhance further Melbourne's many competitive advantages.

"MPC has now reduced wharfage charges by an average 44.1 per cent since 1996. These latest cuts show that we are serious about maximising the port's beneficial impact on the Victorian economy and will help ensure that Melbourne remains Australia's premier port.

Japanese Ports: Y2K Compliance Measures

June 1999 Ministry of Transport

ITH regard to measures to achieve compliance for the year 2000 (Y2K) computer problem in the field of maritime transport, the approach of the Ministry of Transport has been to address individual industries separately, for example shipping business, port transportation business, and warehousing business. Through individual business association in each industry, the ministry is giving guidance in a number of areas, including the spread of thorough knowledge of the Y2K problem, and the conduct of amendments and simulation tests, and the formulation of contingency plans. In addition, at three month intervals it is reassessing the state of compliance and promoting compliance measures.

Given that Japan is dependent upon

ings of \$7.6 million to port users and

increase to \$72 million the total benefit

international trade for many of its social and economic activities, it is of the greatest importance that the many businesses that operate in key international ports implement Y2K compliance measures appropriately, so as to make doubly sure that these ports remain fully functional in all respects. To that end, in addition to the implementation of Y2K measures applicable to individual industries referred to in the previous section, it is also essential to confirm the necessary measures on a portby-port basis. That is, the businesses connected with each individual port must conduct mutual confirmation of the state of their Y2K readiness and steadily implement compliance measures, so as to assure even greater certainty that the measures are effective, and at the same time to ensure full confidence in the port as a whole.

To this end, with regard to the Japan's seven largest ports (Tokyo, Yokohama, Nagoya, Osaka, Kobe, Kanmon, and Hakata), which together handle more than 90 percent of the country's total containers for international trade, the Ministry of Transport has formed Conferences on Y2K Measures composed of all entities connected with each port, including port management body, port transportation business companies, warehousing business companies, and shipping companies. Through the exchange of information and mutual checks on the state of Y2K compliance, extra assurance is being given to the measures applicable to each port as a whole.*

* These conferences are also established for Shimizu port, Yokkaichi port and Hushiki-Toyama port.

The following is an outline of the state of progress by the Conferences on Y2K Measures at individual ports.

(1) Holding of first conference meetings
Osaka port: April 26, 1999
Kobe port: April 27, 1999
Nagoya port: May 12, 1999
Kanmon, Hakata ports: May 17, 1999
Tokyo, Yokohama ports: May 18, 1999

Principal agenda items

- The situation regarding the Y2K problem
 - : Explanation of such matters as the actions taken by the govemment as a whole regarding the Y2K problem, support measures by the government, and international develop-

ments.

- The status of the implementation of Y2K compliance measures by businesses
 - : Report on the status of the implementation of Y2K compliance measures by individual businesses
- The implementation of questionnaire survey of the status of Y2K efforts by businesses
 - : Decision on the conduct of a questionnaire survey of the status of Y2K efforts by individual businesses, targeted at all businesses operating in each port.

(2) Holding of second conference meetings

Nagoya port: June 15, 199 Osaka port: June 16, 1999 Kobe port: June 17, 1999 Tokyo, Yokohama ports: June 17, 1999

Kanmon, Hakata ports: June 23, 1999

Principal agenda items

- The aggregate results of the questionnaire survey
 - : Announcement of the aggregate results of the questionnaire survey; these results are included in the accompanying sheet.

Evaluation of survey results

 In each port, the rate of progress in simulation tests with respect to important clerical processing systems and control systems was generally 60-70 percent. The ratio of the number of businesses that had completed simulation tests by the end of June was 50 percent, and completion by the end of September is planned by approximately 80-90 percent.
 The Y2K-related operations of largescale businesses are being carried out on schedule and smoothly.

[3] In view of the above, it is forecast that Japan's seven major ports will generally be able to maintain their present functions.

[4] As some examples of lagging-behind by small and medium enterprises was identified, it will be desirable to strengthen guidance.

Specifically,

[1] for businesses whose Y2K-related management structures are not yet established, guidance to ensure that the structures should be established promptly. [2] For businesses with no plans to formulate contingency plans, guidance to ensure that they are formulated as quickly as possible, by this autumn at the latest.

[3] For businesses whose simulation tests are not to be conducted until later than September, guidance to ensure that the tests are conducted by September.

(3) Manner in which the Conferences on Y2K Measures are to proceed

- Based upon the results of the questionnaire survey the conferences will, through the medium of guidance directed at principal businesses, endeavor to ensure that more thorough efforts are made with compliance measures, and that contingency plans are drawn up for each port independently.
- The third round of conference meetings are scheduled to be held by September. Prior to those meetings, a second questionnaire survey will be conducted.

(4) Formulation of contingency plans

It has been decided that, together with the formulation of contingency plans by individual businesses, the contingency plans for each port, which are to lay down provisions concerning such matters as orders for liaison among the concerned parties on critical dates, will be drawn up by this autumn. That will make possible switchovers to alternative methods, swift and closely coordinated collaboration among businesses, and rapid responses by the Maritime Safety Agency.

Spread of the through knowledge about the Y2K problem to foreign vessels

Based on the result of the deliberations within the framework of the Tokyo MOU (Memorandum of Understanding), the maritime authority will, when a PSC (Port State Control) inspection is conducted, request the captain of the ship in question to hand letters to the ship owners and operators asking them to pay particular attention to the Y2K problem and to respond to the questionnaire regarding this problem. Through these measures we will encourage the foreign vessels to take necessary measures against Y2K problem.

Port of Kitakyushu: Major Improvements Under Way



HE Port of Kitakyushu, located in western Japan, is called "the gateway to Asia" and is growing into a major container facility, with a host of international container liner routes connecting in particular with other ports of Asia. The Kitakyushu City government, which is responsible for the operation of the port, has now started the construction of a large-scale container terminal at Hibikinada District, underscoring the port's determination to improve its facilities and give better service to carriers, shippers, consignors and other users as the 21st century looms ever closer.

Upgrading Port Facilities to increase Cargo Volume: The Port of Kitakyushu was reorganized in 1964 through the merger of three ports of Moji, Kokura and Dokai. The Port of Moji enjoys a strong reputation overseas, thanks mainly to the fact that it has been an international trade port since it opened in 1889.

Following the establishment of the Port of Kitakyushu, the first container terminal in West Japan was opened in 1971. Subsequently, to meet the increasing container cargo volume, Tachinoura Container Terminal and Kokura Container Terminal were constructed and started operation in 1979 and in 1997. Implementation of Hibikinada Hub Center Plan: In the meantime, the Port of Kitakyushu set its eyes on the 21st century, with various projects. The most important of them is the construction of Hibiki Container Terminal.

The Port of Kitakyushu, having set out plans for the Hibikinada Circum-Yellow Sea Circle Hub-Center Concept, started the construction of a container terminal in Hibikinada District in December 1997, with the intention of matching the world standard ports in terms of size and scale. This concept was based on Japan's port and harbor policy which the Ministry of Transport unveiled in 1995, covering Tokyo Bay, Ise Bay, Osaka Bay and Northern Kyushu including the Port of Kitakyushu.

The policy identified four international hub ports with deep-water berths for further development. The Port of Kitakyushu is connected through ocean route networks with various Asian ports including those along the Circum-Yellow Sea Circle. By fully utilizing its geographic advantage and linking the bread-and-butter Trans-Pacific and Asia-Europe routes with the Circum-Yellow Sea Circle network, Hibiki Container Terminal is in a position as a hub port in Asia to relay North America/Europe-bound container cargo which originates from western Japan and the Circum-Yellow Sea Region.

In the initial stage of the project to 2003, a total of one billion yen will be invested in the construction of container terminals of 0.5 million TEU annual handling capacity, with two berths each of 15 and 10 meter water depths respectively, 36 hectres of terminal land for use an container yards to the rear of the berths, and 47 hectres of port and harbor related land. Work is continuing on the construction of a berth with 15 meter depth alongside and breakwater.

Reclamation work is also continuing. The concept is to construct by 2020 container terminals of 1.5 million TEU annual handling capacity, with six berths of 15-16 meter water draft alongside, four berths boasting 12 meter draft, two berths of 10 meter draft, 149 hectres of terminal land and 318 hectres of port and harbor related land.

In addition, in the hinterland of the Container Terminal, low-cost and good quality land as vast as 2,000 hectares for various industrial purposes has been reclaimed. Once the new container terminal is fully operational, port and distribution related enterprises will be ready to move in even before 2003.

Three Goals of Kitakyushu

To materialize the concept of Circum-Yellow Sea Circle Hub Port, the Port and Harbor Bureau of Kitakyushu City government has been endeavoring not only to upgrade facilities from the hardware aspect, but also to enhance administration and management from the software aspect. Playing a trump card, they have set up the three targets of

- 1. (Economical cost) the lowest cost port in Japan
- 2. (Operation) 24 hours a day and 365 days all year round
- 3. (Port concept) high punctuality, reliability and efficiency.

In order to make Kitakyushu a userfriendly port, terminal mechanization, automation and information systems have been introduced to minimize portrelated cost. Aiming at building up a brand new type of port in a break with past practices, the port is undergoing drastic changes.

Logistics Center for the 21st Century

In tandem with the development of Hibikinada, Kitakyushu City is also upgrading the New Kitakyushu Airport.

The New Kitakyushu Airport is a fullscale offshore airport built on a 373 hectare man-made island reclaimed by dredging. With a runway of 2,500 meters long and capable of round-the-

At present (as of June, 1999)

Hibiki Container Terminal (image, in 2020)

clock operations, the airport is scheduled to open in 2005. Side by side with the construction of the Hibiki Container Terminal, an immense "sea & Air" logistics base will be born in the near future in Kitakyushu City.

Outline of the Hibiki Core International Port Facility size

- Completion of preparation (2020)
 Containers handled: 1,500,000 TEU
 Container facilities: Six -15m berths
 Four -12m berths
 Two -10m berths
 Area: Approx. 541.6ha
- 1st stage (2003)

Containers handled: 5,000 TEU Container facilities: Two -15m berths Two -10m berths Area: Approx. 83ha

We will respond to all your inquiries about the Hibiki Container Terminal or the industrial land in its hinterland by E-mail or through the homepage of the Port of Kitakyushu.

e-mail: kqport@kitaqport.or.jp URL: http://www.kitaqport.or.jp Port of Kitakyushu. 1-2-7 Nishikaigan, Moji-ku, Kitakyushu, 801-8555, Japan Tel. 81-93-321-5941 Fax 81-93-321-5915

Auckland: E-Clearance For Paperless Gateway

ORTS of Auckland is well on track to providing a paperless gateway, with the recent signing of an agreement with Customs on electronic clearance procedures – a first for New Zealand ports.

Ports of Auckland and Customs worked over several months to develop the procedures, which apply to full, empty and bulk containers where the importer is approved by Customs.

On clearance, Customs sends an electronic message to Ports of Auckland advising that the specified containers have been released. Containers can be cleared even before they arrive at Auckland.

"Electronic customs clearance is a significant step towards paperless ports and the seamless movement of container cargo. We can thank the Customs Service for the excellent cooperation that has made it all happen, says Chief Executive Geoff Vazey.

"The Customs service is committed to moving to an e-commerce environment and we are constantly striving for strategic initiatives that will continue to protect the community but reduce compliance costs for New Zealand industry," says New Zealand Customs Service National Manager of Goods Management, Robin Dare.

Ports of Auckland has a similar arrangement with the Ministry of Agriculture and Fisheries (MAF), and shipping companies have been able to clear containers electronically for six months.

Now the company is looking to simplify export processes through e-commerce. As a first step, an export cargo carters' note is available on the website.

Importers and others waiting for container shipments from overseas can check the status of a container currently in Ports of Auckland care via our Axis Intermodal website.

People can quickly see if Customs or MAF have cleared the container or put a hold on for inspection, or if the shipping company has released it for delivery.

The container number, available on the purchase documentation from the overseas supplier, our container business website name (www.axis-intermodal.co.nz), and access to the Internet are the only things needed.

However, the shipment needs to be FCL (full container load), as this service does not apply to LCL (less than container load) containers or break bulk

Robin Dare, New Zealand Customs Service National Manager of Goods Management, and Geoff Vazey, Ports of Auckland Chief Executive, signing the agreement on electronic customs procedures.

cargo. (Almost all Ports of Auckland container business is FCL.)

The company's on-line container tracking service is part of an overall strategy to provide customers with a paperless port system for container cargoes. It is good news for importers, customs brokers and trucking companies serviced through Auckland.

The system greatly reduces documentation, and speeds up and simplifies the import process. It also allows better use of assets and facilitates operational planning. Trucking fleets can be better used when not waiting for documents, for example, and many importers can achieve their "just-in-time" trading philosophy.

KEY Points:

- The days of paperless ports are drawing nearer with electronic import processes
- Electronic Customs clearance is a latest development
- People can check the status of their incoming containers on our website

Public Safety Focus of Auckland Y2K Programme

ORTS of Auckland is promoting public safety on the Weitemata Harbour for New Year's Eve by gauging the standard of Year 2000 compliance of commercial vessels that call at Auckland.

"Public safety on the harbour is a key focus of our Y2K checking programme," says Ports of Auckland Chief Executive, Geoff Vazey.

"We aim to flush out any abnormalities and ensure safety is not compromised by unforeseen Y2K equipment or system malfunctions through a survey of shipping lines. Information received will be used to gauge the standard of all systems onboard all vessels that call at Auckland.

"This process will be conducted through a questionnaire developed by the International Maritime Organisation, a governing body in the shipping industry. The questionnaire covers ships' navigational equipment, propulsion, cargohandling and power systems," Mr Vazey says.

"If we have any doubt about a vessel due to arrive between midnight 31 December and midday on 1 January, we will have the vessel wait outside the Waitemata Harbour until checks onboard are completed," Mr Vazey says.

Most commercial vessels that call at Auckland operate on Greenwich Mean

Time (GMT), so their systems will register the Year 2000 at midday on 1 January, New Zealand time, rather than at midnight on 31 December. Others may operate on different time zones according to where they were built.

As it happens, little commercial shipping traffic is expected on the harbour between midnight New Year's Eve and noon on 1 January.

"We're expecting only one or two cruise ships and one or two container ships at most to come or go during 31 December and 1 January," says Ports of Auckland Manager Marine Services, Captain Wayne Mills.

"If New Year festivities on the harbour look likely to create a hazard to commercial shipping, we may need to hold shipping movements for half an hour or so. But we already do this on special occasions, such as on Regatta Day and during international yacht races," Captain Mills says.

"In addition, all commercial ships will be guided while in the harbour by two tugs, and a staff member will board incoming ships to assist with navigation if required."

Ports of Auckland is taking a strategic approach to Y2K issues, with a broadranging testing programme and contingency planning well under way.

"We are very confident that cargo handling and other commercial activities at the port will continue as normal," Mr Vazey says.

KEY Points:

- Public safety on the Waitemata Harbour is the company's priority over New Year
- Y2K problems will be flushed out through a comprehensive questionnaire
- Commercial shipping movements will
- be halted if festivities look like creating a hazard
- Ships will be guided by two tugs and a staff mem

Experiments Begin for Axis Fergusson Extension

XPERIMENTAL 'mudcreting' has begun in preparation for reclamation work for the extension of Axis Fergusson container terminal.

The purpose of the trial work is to develop monitoring methods to ensure consent requirements are met during the construction phase, says Ports of Auckland Group Manager Port Planning, Ben Chrystall.

The experiments involve trialling the use of dredged material from the Port of Onehunga. About 2,000 cubic metres will be trucked to Axis Fergusson and mixed with cement to form mudcrete, which solidifies quickly and is very strong.

The mudcreting technology has been used successfully in the Viaduct Basin and in the New Zealand American Express America's Cup Village. If the trial at Axis Fergusson meets monitoring expectations, Ports of Auckland plans to use all the dredgings from Auckland and Onehunga for the reclamation work over several years.

Use of dredgings in this way is ideal from both environmental and cost perspectives.

It avoids unconfined disposal at sea (dredgings are usually disposed of at a site outside the 12 mile limit – at high cost). Because the mudcreting process quickly binds dredged sediments into a solid material, little or no impact is expected on the harbour or water quality. And the more that dredgings can be used for the reclamation, the less quarry rock will be required.

The Axis Fergusson extension involves the construction of a new 320 metre berth on the northern face of Axis Fergusson and the reclamation of 9.4 hectares of land on the eastern side

for container handling. Construction is expected to begin next year.

The total cost of the extension is about \$100 million. The company will provide a public walkway along the eastern side of the reclaimed area.

An economic impact assessment estimates that the additional trade facilitated by the extension will be worth \$77 million per year to the regional economy by 2010 and will lead to the creation of 540 permanent jobs, in addition to several hundred jobs related to construction.

Port Taranaki's New Crane is BIG

HE most dramatically visible feature of Westgate Port Taranaki's Blyde Terminal is a brand new Austrian-built Liebherr LHM400 crane.

It's a big machine. Sitting on 64 wheels and 32.5 metres high, the 390tonne crane makes an impressive sight as it busies itself picking up export containers and positioning them onto ships berthed alongside Blyde Wharf.

Almost as impressive is the position of the crane's operator during the container handling duties. He is seated in a cabin 23 metres above the ground, and uses video camera technology to help him position containers in their allocated spaces in ship holds.

But container work is not the new crane's only duty. With an outreach of 48 metres and a lifting capability of more than 100 tonnes at 22 metres, it is being used for a variety of tasks including loading stores and equipment on and off the vessels that support the Maui natural gas and oil production operation off the Taranaki coast.

But the LHM400's primary task is to handle the growing amount of container traffic that is now passing through Westgate Port Taranaki as a result of development of Blyde Terminal.

In that regard it is doing the job very well, says Mr Robin Aitken, Westgate Cargo Services Manager.

"It is a very strong and versatile crane," he says. "We have a total of five employees who are being trained as operators, and they are steadily becoming skilled at their task.

"There are a lot more buttons to push than with other cranes, and it takes skill and concentration to efficiently operate what we call the spreader, which is the piece of equipment that actually picks up a container. "But the operators are learning quickly and doing well. Currently the crane is handling about 15 containers per gross hour, and at times in ideal working conditions we have achieved more than 24 containers per hour."

PSA Corporation, Reed Sign MOU for SingaPort

SA Exhibitions Pte Ltd, a subsidiary of PSA Corporation Ltd, has signed a Memorandum of Understanding (MOU) with Reed Exhibitions Pte Ltd on 21 April 99 to jointly organise SingaPort Exhibitions, beginning with SingaPort 2000 which will be held from 29 - 31 March 2000 at the Singapore Expo. The MOU was signed by Mr Ong Tiong Beng, Executive Vice-President (Properties), PSA Corporation and Mr Paul Beh, President, Asia/Pacific. Reed Exhibition Companies. Under the MOU, PSA Exhibitions Pte Ltd and Reed Exhibitions Pte Ltd will jointly promote SingaPort to prospective trade visitors and exhibiting companies.

As the only dedicated maritime exhibition for the Asia-Pacific, SingaPort 2000 will showcases the latest technologies and services in shipping, ports, marine and cargo handling equipment, warehousing and logistics, offshore technology and shipbuilding, ship repair and conversion, among other areas.

Mr Ong Tiong Beng, Executive Vice-President, PSA Corporation Ltd, said, "SingaPort 2000 will be an exciting event for PSA, this being the first maritime exhibition for Singapore in the new Millennium. PSA will give its fullest support to ensure that it meets the high expectations of both customers and the shipping/maritime community. The exhibition is timely as there is currently a healthy demand for port/maritime equipment and services, arising from the building and upgrading of port facilities in China, India, Malaysia, the Middle East and Vietnam. We will work with Reed to position SingaPort strongly as an international maritime event."

Mr Paul Beh, President, Asia/Pacific, Reed Exhibition Companies, said, "This partnership represents another breakthrough for Reed in its quest for building strategic, long-term, world-renowned events in Singapore. SingaPort is clearly positioned to achieve such a status; having PSA, a leader in the industry as our partner is an important advantage." SingaPort 2000 is one of the two Singapore Millennium 2000 celebration events endorsed by the Millennium 2000 Co-ordinating Committee. The other is Asian Aerospace, also managed by Reed. Since its inception in 1990, the SingaPort exhibitions, organised by PSA once in every two years, have received good support from the industry. SingaPort 98 saw the participation of about 450 companies from 25 countries, and attended by marine industry professionals from 50 countries and conference delegates from 30 countries.

MPA News Release on Cruise Ship 'Sun Vista'

N Thursday 20 May 1999, a Bahamas-registered cruise ship Sun Vista operated by a Singapore company, Sun Cruises, caught fire in the Malacca Strait, southwest of Penang. It sank subsequently. All the passengers and crew were saved through the timely evacuation of the ship and the swift response and effective handling by the Malaysian maritime authorities. The rescue operation was carried out under the supervision of the Port Klang Maritime Rescue Coordination Centre (MRCC).

As soon as the Maritime and Port Authority of Singapore (MPA) was notified about the fire, its emergency response team was put on standby to assist in the rescue operation. The MPA's Port Operations Control Centre was also in contact with the Port Klang MRCC and the local agent, Jardine Shipping, to provide any assistance that might be needed, and to get more details about the incident and the welfare of the passengers and crew. The MPA also alerted the salvage companies and RSN. Although the MPA's help was not required, it continued to monitor the situation.

The MPA places great emphasis on the safety of cruise ship passengers. One of the measures taken by the MPA is to insist on the carrying out of regular lifeboat and fire drills by cruise ships which call at Singapore. Evacuation exercises by cruise ships are also carried out together with the MPA.

The MPA expects that as the Flag state the Bahamian authorities will be investigating this incident and we will be in touch with them. Also, the MPA will be in contact with Sun Cruises to find out more about the causes of the incident on its own.

Singapore Accedes to MARPOL 73/78 Annex V

INGAPORE has become a party to Annex V of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 (MARPOL 73/78). The Instrument of Accession to Annex V of MARPOL 73/78 was deposited with the International Maritime Organisation (IMO), which is the depository for the Convention, on 27 May 1999. Annex V will enter into force for Singapore in 27 August 1999.

MARPOL 73/78 is a key international treaty adopted by the IMO for the prevention of pollution from ships. Annex V of MARPOL 73/78 contains regulations pertaining to the prevention of pollution by garbage. Garbage refers to all kinds of victual, domestic and operational waste, excluding fish and parts thereof, that are generated during the normal operation of the ship. Under Annex V, the discharge of plastic into the sea is prohibited while the discharge of other materials including dunnage, food wastes and rags is restricted.

In addition, every ship of 12 metres or more in length overall must display placards which notify the crew and passengers of the disposal requirements. Every ship of 400 gross tonnage and above, and every ship carrying 15 persons or more, must carry a garbage management plan, which the crew should follow. The ship is also required to have a garbage record book if it is engaged in voyages to foreign ports. The Government of each party to the Annex is required to ensure the provision of facilities at its ports and terminals for the reception of garbage, without causing undue delay to the ships.

This Annex applies to all ships including yachts, fishing vessels and offshore platforms. Currently 91 countries or 83 per cent of the world's merchant shipping fleet are parties to Annex V.

The Maritime and Port Authority of Singapore (MPA) has consulted the shipping community including shipyards and terminal operators on Singapore's accession to the Annex. In January 1999, MPA issued a marine circular to urge shipowners to take early action to comply with the requirements of Annex V.

Our accession to Annex V of MARPOL 73/78 demonstrates that Singapore places great importance on the prevention of marine pollution by garbage from ships. Our existing legislation to prevent pollution of Singapore waters by garbage was put in place in 1971 under the Prevention of Pollution of the Sea Act. It provided for severe penalties against those who dispose, discharge, put, throw, cast or deposit refuse, garbage and plastics from any ship or a place on land into Singapore waters. The Act was amended in 1990 to take into account Singapore's accession to Annexes I and II of MARPOL 73/78 dealing with pollution of the sea by oil and chemicals from ships. The Prevention of Pollution of the Sea Act, 1990 retained the penalties.

To discourage ships from the indiscriminate throwing of garbage into our waters, the Port of Singapore has been providing garbage collection service in our waters. This function was taken over by the MPA in February 1996. Currently, an average of 7,200 vessels are visited by barges operated by the MPA's contractor monthly and about 240 tonnes of garbage are received from ships at the anchorage monthly. The collected garbage are then transferred ashore and hauled to the dumping ground of the Ministry of the Environment for disposal.

As a party to Annex V of MARPOL 73/78, Singapore has the obligation to give effect to the provisions of the Convention in its laws. The three sets of regulations that contain the essential provisions to give effect to Annex V are, namely, the Prevention of Pollution of the Sea (Garbage). (Reception Facilities) (Amendment) and (Composition of Offences) (Amendment) Regulations 1999. Under these regulations, all non-oil/nonchemical terminal operators and shipyards will continue to provide facilities for the reception of garbage from ships. Ships calling at oil and chemical terminals will continue to have their garbage collected at the anchorages before or after calling at the terminals. The MPA will continue to provide facilities for the reception of garbage at the anchorages. These regulations are expected to be brought into force on the same day, Annex V comes into force for Singapore i.e. 27 Aug 1999.

Enforcement of the provisions of these Regulations such as garbage record book, garbage management plan, and placard is expected to contributes to cleaner Singapore waters. The Regulations will provide for a penalty of up to a maximum fine of \$\$20,000 and/or a maximum prison term of two years for the master of a Singapore ship found guilty of polluting the sea anywhere in the world by garbage. These severe penalties will discourage Singapore ships from the indiscriminate throwing of garbage not only into Singapore waters but also into the sea anywhere in the world.

Accession to Annex V therefore demonstrates Singapore's commitment to protecting the marine environment. As parties to Annex V are expected to facilitate the clearance of each other's ships in their ports, accession to Annex V will facilitate the clearance of Singapore ships in the ports of parties to Annex V.

ISO 9002: PSA Marine Committed to Quality

SA Marine (Pte) Ltd's dedication and commitment to providing quality service to its customers has been reaffirmed with the award of the ISO 9002 Certification from the Singapore Productivity and Standards Board (PSB). PSA Marine, a wholly owned subsidiary of PSA Corporation and Singapore's leading marine service provider, provides Pilotage, Towage, Water Supply, Marine Transportation, Heavy Lifts and Marine Environment Services to the maritime/shipping community. The PSB ISO 9002 award for quality management standard is internationally recognised by IONet members (an international grouping of major certification bodies representing 28 countries in Europe and Asia, including PSB).

PSA Marine is among the first Towage Service Providers licensed in Singapore to be awarded the ISO 9002 certification. The ISO certification formally documents that the company's work processes meet internationally recognised standards, even as quality standards and procedures have already been in place prior to the ISO exercise.

"Attaining ISO 9002 status is a milestone in our continuing efforts to provide quality service to our customers," explains Mr V Sivarajan, Managing Director, PSA Marine. "It is gratifying that all staff participated actively in the rigorous process and that it was done completely with in-house resources, thereby giving staff the ownership of the processes and certification."

"We are proud to be associated with PSA Marine," said Capt Alfred Tan, Managing Director of Seamaritime Agencies Pte Ltd. "Now that PSA Marine's quality management standard is recognised internationally, we and our principals can be assured that the high service level and customer satisfaction that we have been accustomed to will be maintained."

As part of its on-going Quality Service Programme, PSA Marine recently launched two initiatives: (a) the "Even Alert" service on PortNet allows customers to receive the latest updates of the status of their vessels through their memo pagers. This service adds value by giving customers instant access to real-time information and affords them greater convenience while saving time; (b) A two-way paging system, which uses wireless transmission of data for marine operations, was also commissioned to ensure efficient management of resources and enhance customer service.

Business partners will find comfort in dealing with an organisation whih an organisation which is committed to deliver nothing but the best for its customers.

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