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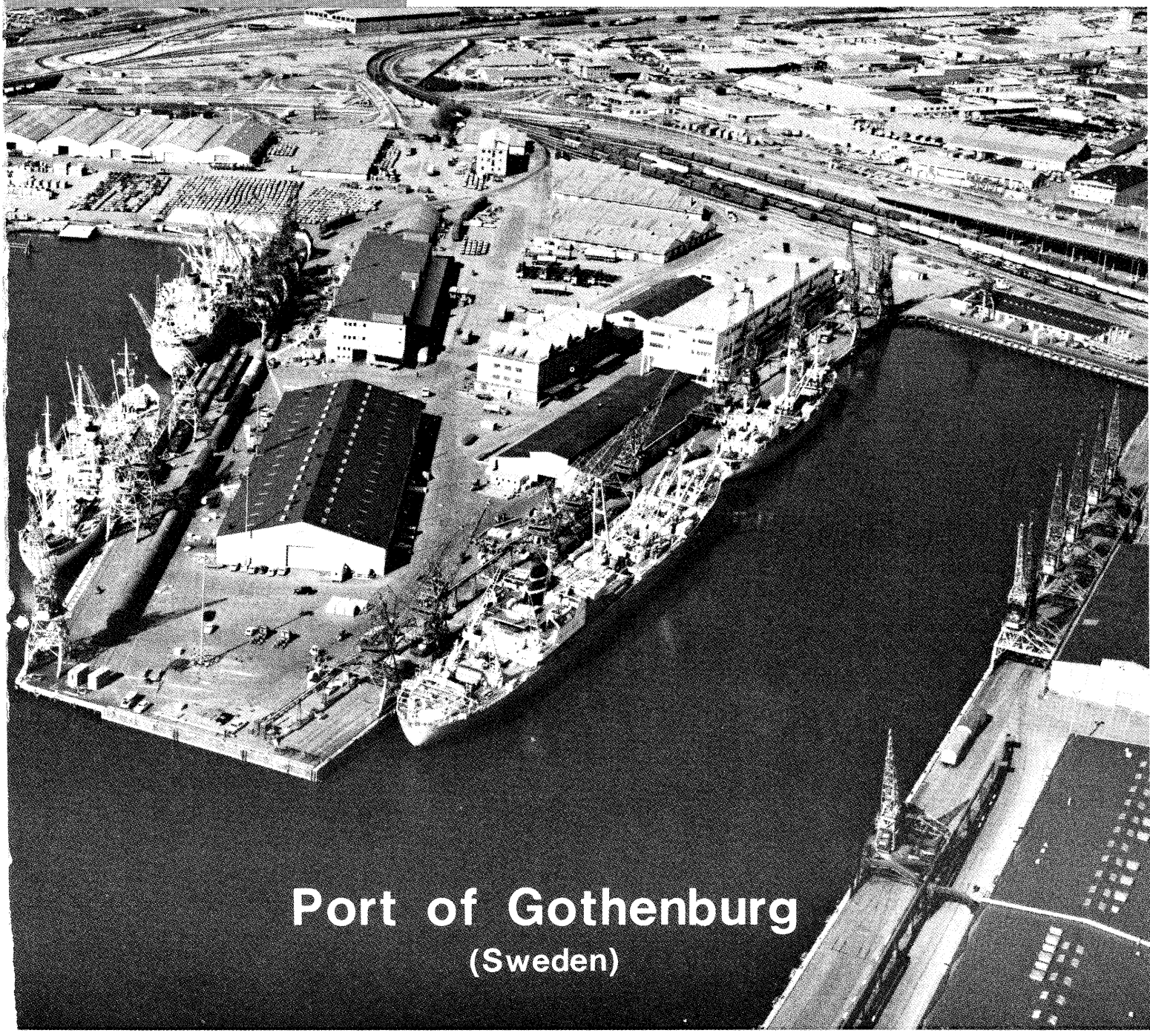

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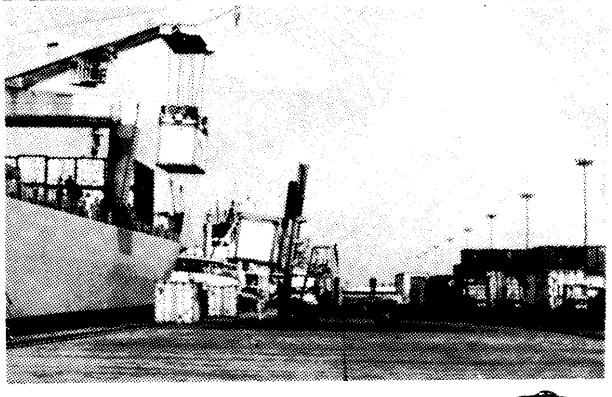

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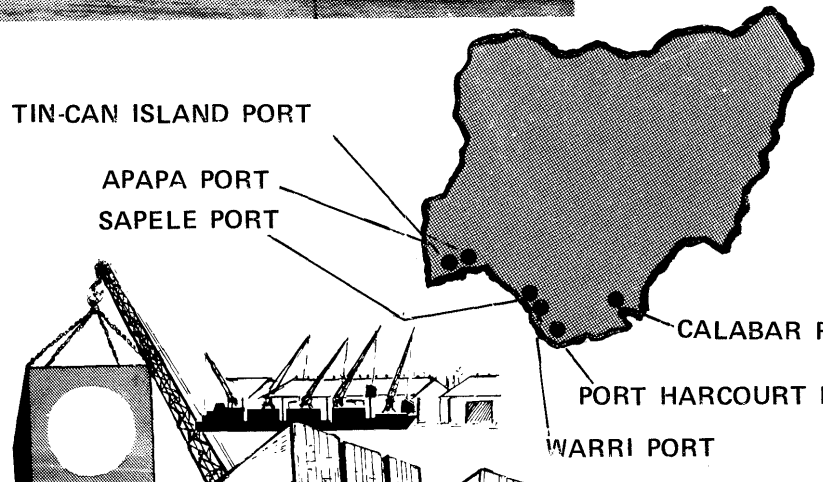

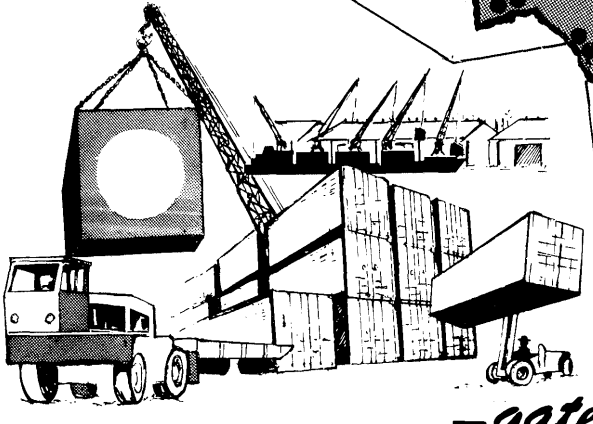

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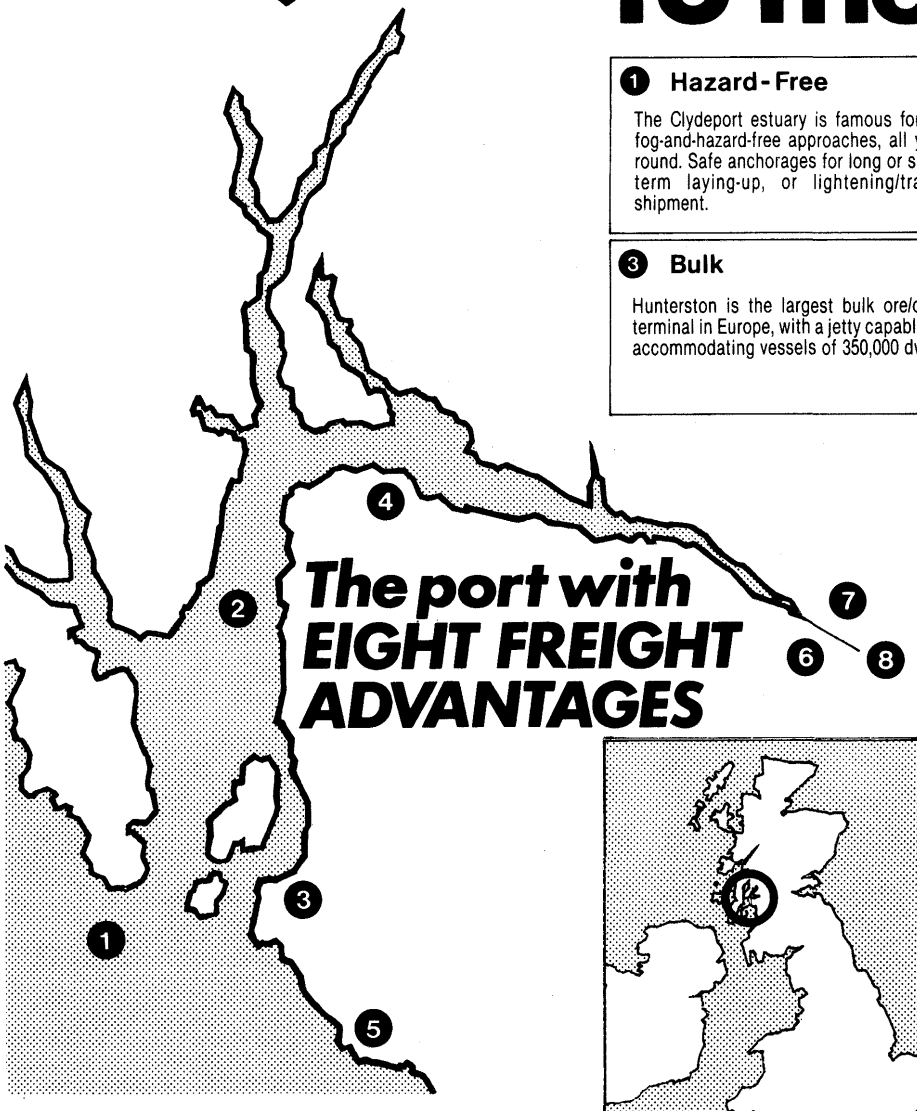

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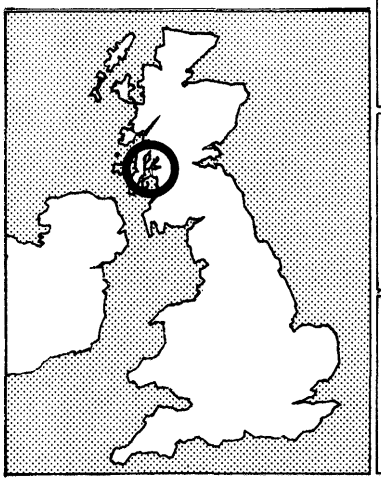

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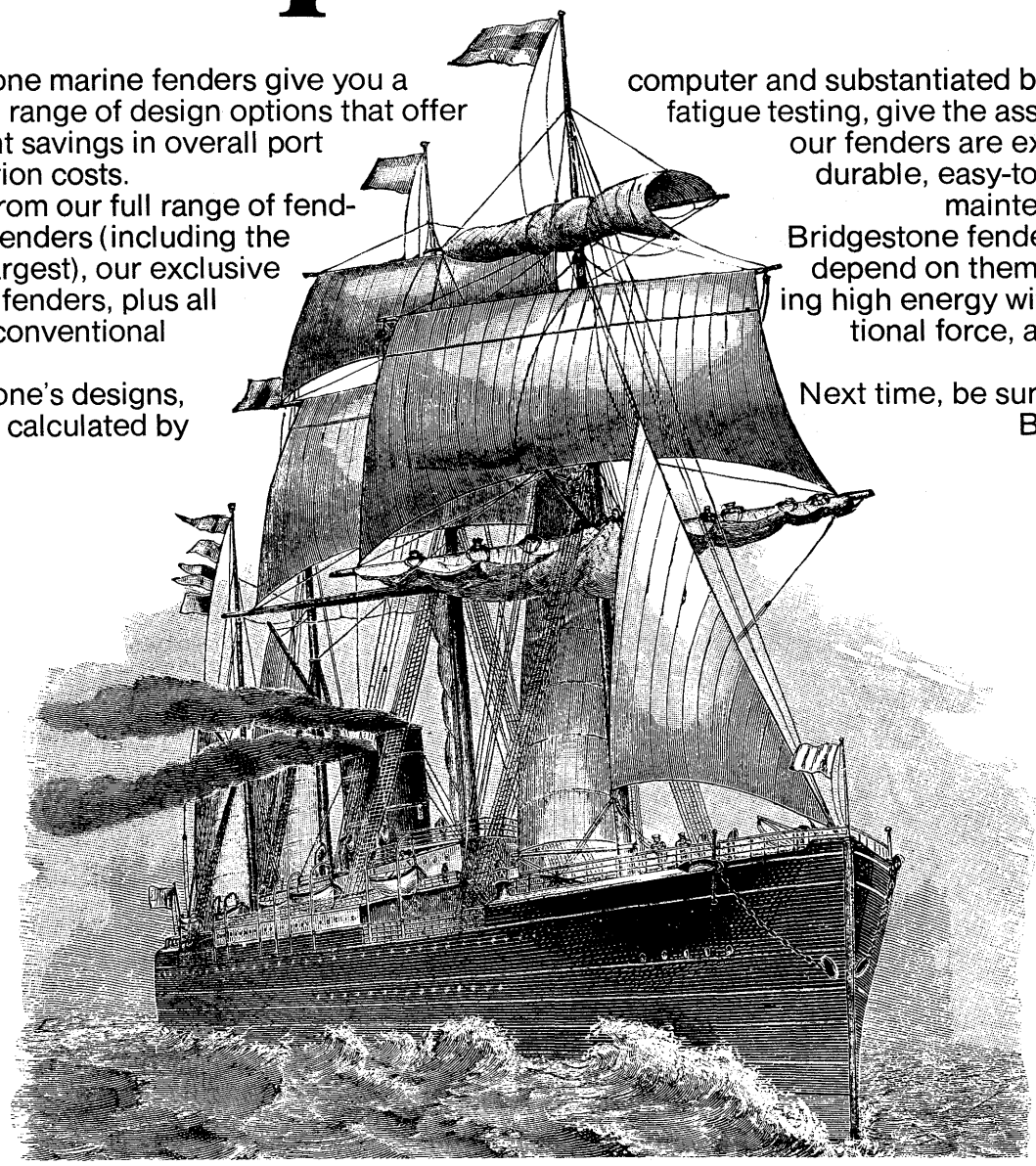

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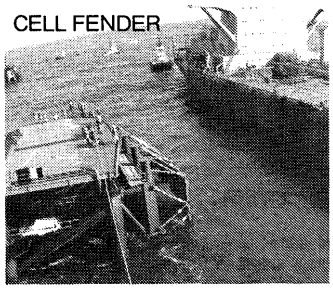

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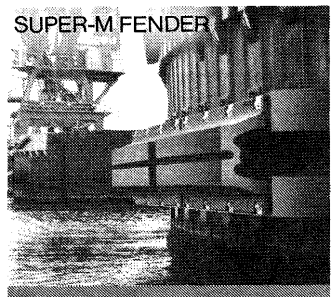

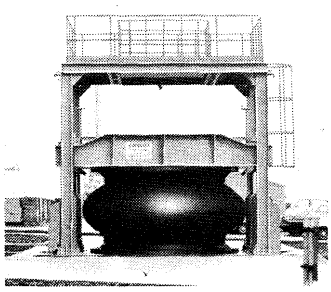

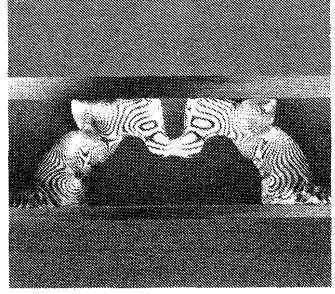

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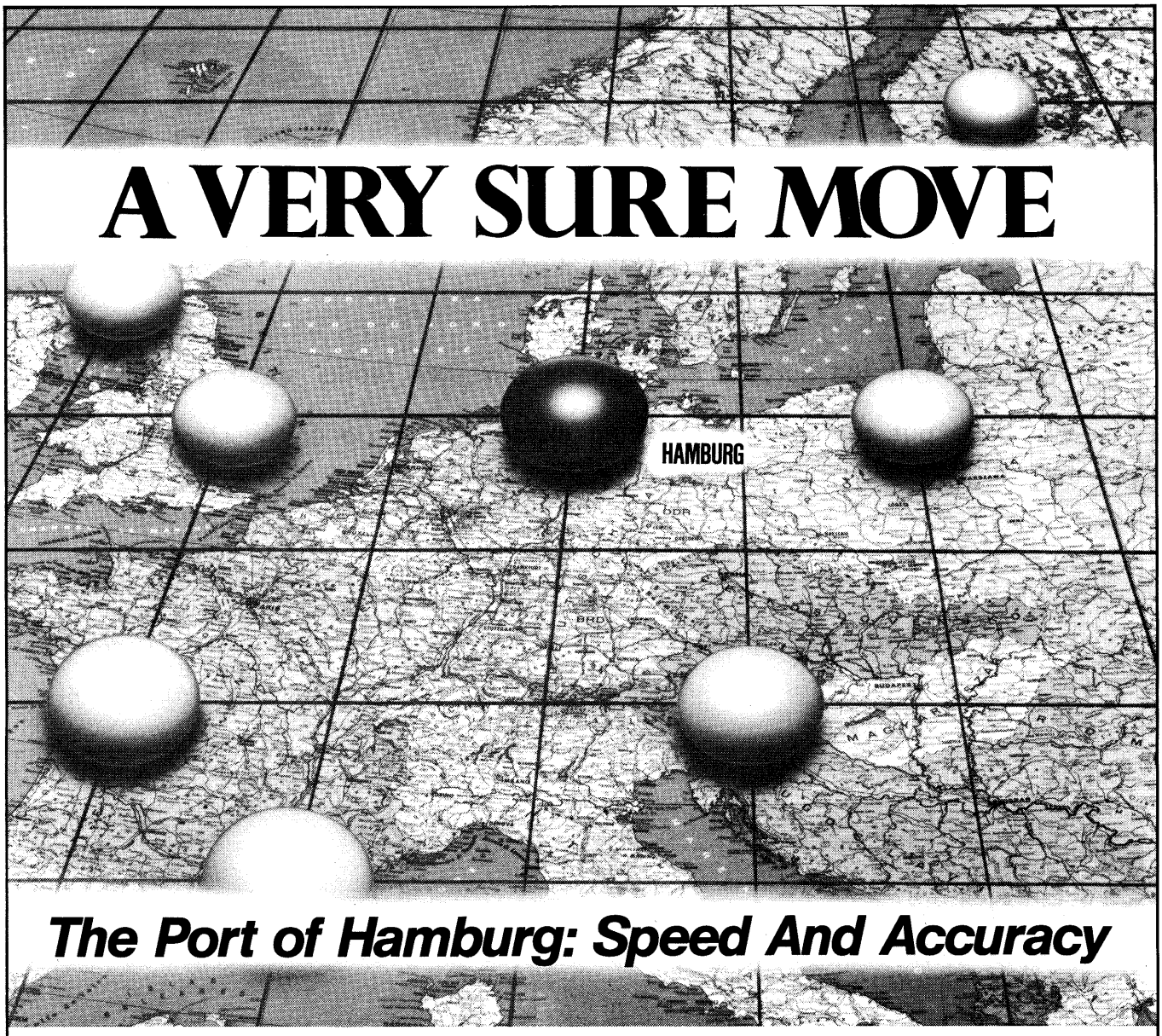

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Head Office:
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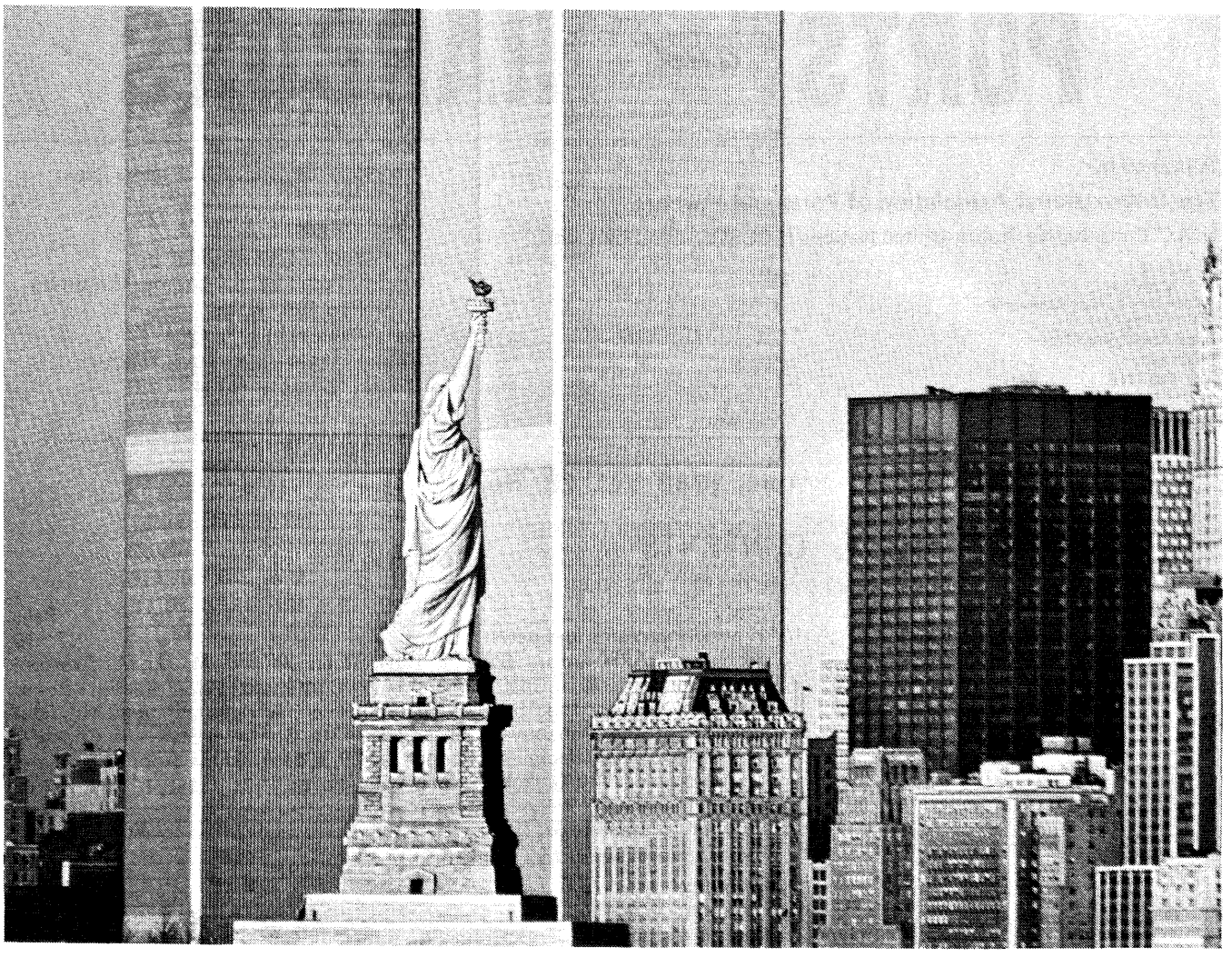

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IAPH announcements and news

Winners of IAPH Award Scheme 1981/82 announced —Dr. Kirincic, Port of Rijeka, received 1st Prize—

Mr. J.K. Stuart, Chairman of Associated British Ports (former BTDB) and Chairman of the IAPH Committee on International Port Development, informed Head Office by telex on January 26th of the result of the IAPH Award Scheme 1981/82, an essay contest entitled "How could the efficiency of your port be improved ?"

The panel of judges, consisting of Messrs. J.K. Stuart, U.K. (Chairman); J. Bayada, Cyprus; E. Williamson (Chief of UNCTAD's Ports Section); J. Mturi, Kenya; S. Ullman, Sweden; A. Alam, Pakistan; carefully considered all entries to the 1981/82 Award Scheme competition. 23 entries were received, including several for the first time in the French and Spanish languages. The consensus of opinion was that Dr. Kirincic, Port of Rijeka, Yugoslavia, should be awarded 1st Prize. His entry was, in the panel's view, not only outstanding in presentation but also extremely well-considered from a technical point of view. In it he endeavored to point towards methods of improving bulk cargo unloading rates by means of improvements to grab unloaders.

On February 7th, Mr. Stuart telexed the Head Office to announce the panel's decision on the other placings. The complete list of prize winners reads as follows:

1st Prize: Dr. Josip Kirincic, Port of Rijeka, Yugoslavia
(To be awarded a silver medal, US$750 and an invitation to attend the 13th Conference of IAPH in Vancouver, June, 1983. with travelling costs and hotel accommodation provided.)

2nd Prize: Mr. Miguel A. Barrientos and
Mr. Gonzalo A. Panameno, Comision Ejecutive Portuaria Autonoma (CEPA), El Salvador
(To be awarded US$500)

3rd Prize: Mr. Nurul Islam Majumder, Chittagong Port Authority, Bangladesh
(To be awarded US$400)

4th Prize: Mr. Ngoma Khuwa, Office National des Transports (ONATRA), Rep. of Zaire
(To be awarded US$300)

In addition to the above prize winners, the panel considered that the entries submitted by the following individuals should be given a consolation prize (an award of US$100).

Farid Ahmed	Chittagong Port Authority, Bangladesh
Md. Ghulam Rasul	Chittagong Port Authority, Bangladesh
Julio Cesar Mejia Umanzor	Comision Ejecutiva Portuaria Autonoma (CEPA), El Salvador
Capt. A. bin Idris	Johor Port Authority, Malaysia
Vidi Makwiza Luzolo and Bazodulua Madoda	Office National des Transports (ONATRA), Rep. of Zaire

Chairman Stuart commented that, apart from the 1st prize winner, the remaining entries were fairly even quality, and it was difficult to decide on specific placings. The number of consolation prizes awarded reflects the generally even quality of many entries. The respective winners will receive a certificate from Chairman Stuart and their prizes from the Head Office in Tokyo in dues course. The Head Office will also be responsible for making the necessary arrangements for Dr. Kirincic, the first prize winner.

The panel and Secretary General jointly expressed their sincere appreciation to all the people who participated, and hope that those who did not receive a prize on this occasion would nontheless feel encouraged to submit entries in future competitions.

The paper by the first prize winner is carried on page 11.

Mr. Bo A. Ekstrom appointed Conference Chairman and IAPH Conference Vice-President

As a result of the meetings by correspondence of all Regular Members of the Association and of the Board of Directors called for March 7, 1983, Mr. B.A. Ekstrom, Acting General Manager of the Port of Vancouver, has been elected as the IAPH Conference Vice-President and Chairman of the 13th Conference of IAPH, succeeding Mr. F.J.N. Spoke, who has recently retired from the post of General Manager of the Port.

Mr. Ekstrom's profile as introduced in "Ports of Vancouver NEWS" (Winter 1982, Vol. 16) is reproduced below:

Ekstrom named Acting GM

The National Harbours Board announced in December that Bo. A. Ekstrom will assume the position of Acting General Manager of the Port of Vancouver, effective February 1st, 1983. This is the retirement date, previously announced, of the Port's General Manager, F.J.N. Spoke.

Mr. Ekstrom, 48, has been employed at the Port of Vancouver for more than nine years. He joined the National Harbours Board, Pacific Region, in 1973, became Senior Port Officer in 1974, and has been Assistant General Manager of the Port since 1975.

Before joining the National Harbours Board, Mr. Ekstrom spent several years in Canada, the U.S., Sweden and England with an international engineering firm.

He holds a Masters Degree in Mechanical Engineering from the University of Stockholm. He undertook post-graduate studies in Business Administration and Finance, and is a Registered Professional Engineer, British Columbia.

Board to select venue for the 15th IAPH Conference 1987 at Vancouver meeting

The site selection for the 15th Conference of IAPH to be held in 1987 in the Asian Region will be made by the Board of Directors at its meeting scheduled for Saturday, June 11 1983, at the close of the 13th Conference in Vancouver, although the official decision is to be made at the closing session of the 14th Conference in May, 1985 in Hamburg.

In accordance with past practice, the Secretary General circulated a letter dated February 1, 1983 to all Regular Members in the Asian Region, sounding them out about their interest in hosting the 15th Conference in 1987. The Secretary General requested those members who had previously indicated their willingness to host a conference to confirm their positions.

By the end of February, Mr. Moon, M. Rhin, Administrator, Korea Maritime and Port Administration (KMPA) had responded to the Secretary General's letter stating that KMPA, in line with the proposal they made at the 10th Conference in Houston (1977) and then at the Executive Committee meeting in Aruba (1982), was eager to host the 15th Conference in Seoul, Korea in 1987. Mr. Moon says that he is preparing to make a presentation, including a 30-minutes film, at the Board meeting.

The conference venue is to be selected on the basis of presentations from the respective candidates.

IAPH to commend Mr. Toru Akiyama at the Vancouver Conference

The Executive Committee agreed at its meeting held in Aruba, the Netherlands Antilles, in May 1982, to commend Mr. Toru Akiyama, Secretary General Emeritus and the President of the IAPH Foundation, for his significant contribution to the growth and development of the Association over more than 30 years. The commendation is to be made at the opening session of the 13th Conference of IAPH in Vancouver on June 6, 1983.

The President, Vice-Presidents, Immediate Past President, Chairmen of the Finance Committee and Legal Counselors and the Head Office secretariat, have been working closely to make the projected commendation a reality. As a result of a thorough exchange of ideas among the members concerned to decide on an appropriate form of commendation, the consensus was recently reached that the Association should commission a bronze relief of Mr. Akiyama to be placed on the wall of the Head Office as a lasting recognition of his contribution. The officers further agreed that, in order to ensure the support of all Association members, the matter be presented to a meeting of all Regular Members.

In this connection, the Head Office drafted the resolution which was later checked by Mr. Patrick J. Falvey, Chairman of the IAPH Legal Counselors and General Counsel/Assistant Executive Director, The Port Authority of New York and New Jersey.

On the authorization of President Mayne and in accordance with the provision of the By-Laws of the Association, the Secretary General circulated a letter calling a meeting by correspondence of all Regular Members of the Association concerning the proposed commendation, with the voting date set for March 30, 1983.

The draft resolution presented to all Regular Members for their deliberation reads as follows:

RESOLUTION TO THANK AND COMMEND MR. TORU AKIYAMA FOR HIS MERITORIOUS SERVICE TO IAPH (DRAFT)

WHEREAS, from the days when the establishment of an international association of port and harbor agencies was first conceived, Mr. Toru Akiyama, with great foresight and effort, played an indispensable role in the task of bringing the Association into being, including taking part in the drafting of the original Constitution and By-Laws; and

WHEREAS Mr. Toru Akiyama, from the inaugural conference of IAPH held in Los Angeles in 1955, prior to and throughout his tenure as Secretary-General of the Association from 1967 to 1973, and following his appointment as Secretary-General Emeritus since 1973, has devoted himself to the stabilization of the Association's financial status and improvement of the efficiency and capabilities of the Head Office of the Association in Tokyo, and thus contributed immeasurably to the growth and development of the Association; and

WHEREAS, in preparation for the Fifth Conference held in Tokyo, Japan, in 1967, Mr. Toru Akiyama, as the chairman of the conference organizing committee, diligently worked and contributed to the success of the conference which turned out to be a keystone in the Association's development; and

WHEREAS Mr. Toru Akiyama, when the Association faced the most difficult financial crisis stemming from the international monetary turmoil in the early 1970s, with extraordinary leadership and zeal, succeeded in establishing the IAPH Head Office Maintenance Foundation in 1973 to assist the Association, and during the ensuing ten years until the Association achieved its financial self-sufficiency in 1982, faithfully continued to give financial support to the Association; and

WHEREAS, on the occasion of the 12th Conference of the Association marking the 25th anniversary, Mr. Toru Akiyama, as the President of the IAPH Foundation, sponsored memorial services for the two founding fathers of IAPH and erected memorial monuments on their graves, sponsored the publication of the book on the history of IAPH and the commendation of the 13 individuals of meritorious service to the development of the Association, and, at the same conference, donated US$100,000 to the IAPH Special Port Development Technical Assistance Fund and a further US$300,000 to the Association as its operational fund in commemoration of the Association's initiative in 1982 to become financially self-sufficient;

BE IT THEREFORE RESOLVED that on this 30th day of March, 1983, at its meeting by correspondence of all Regular Members, as provided for in the Constitution and By-Laws, the Association commission a bronze relief of Mr. Toru Akiyama, as a token of the esteem and thanks of the members of this Association towards his numerous achievements, dedication and self-sacrificing service, and that the relief be placed on the wall of the Head Office of the Association as a lasting recognition of his contribution and as a reminder to future generations of his outstanding character and ability; and

BE IT FURTHER RESOLVED that Mr. Toru Akiyama, at its plenary session of the 13th Conference of the Association in June 1983, be commended by the Association with a scroll of honor and a replica of the bronze relief.

13th Conf.: A Schedule Change

As a result of the Host Port's close scrutiny into the preparation work for the Conference, the Open Forum on "International Port Development" by the IPD Committee to be chaired by Mr. J.K. Stuart, which had been tentatively scheduled for Monday, June 6, from 16:30 to 18:00, immediately following the First Plenary Session, has been rescheduled to be held on Tuesday, June 7, from 17:30 to 18:30 following the panel discussion on Roberts Bank.

Two IAPH bursary recipients announced

Mr. J.K. Stuart, Chairman of the IAPH Committee on International Port Development, announced in his letter to the Secretary General dated 14th February 1983 that an IAPH bursary had been approved for Mr. D. Nunkoo, Mauritius Marine Authority, thus enabling him to attend a seminar on Port Statistics to be organized by the Port of Marseilles Authority, France, for the period 18th-29th April 1983.

According to the application form submitted to Chairman Stuart, Mr. Nunkoo, born in 1949, has been serving the Mauritius Marine Authority since January, 1977 as an officer in charge of statistics.

Mr. Nunkoo participated in the seminar on unification and harmonization of port statistics (project 80/23), held jointly by UNCTAD/ECA in the Seychelles in June 1982, and he intends to implement the system of statistics as proposed in project Raf 80/23 by UNCTAD, by participating in the seminar in Marseilles.

On the instructions of Chairman Stuart, the IAPH Head Office has completed the remittance of his bursary money to the seminar organizer for his course fees and has forwarded the cost of his airfare and accommodation to the Mauritius Marine Authority.

On March 8, 1983, the Secretary General received a telex from Chairman Stuart advising that he had approved a bursary for Mr. K.A.D. Siddhisena, Chief Superintendent, Sri Lanka Port Authority, to attend a diploma course in Port and Shipping Administration commencing September 1983 at UWIST (University of Wales Institute of Science and Technology), Cardiff, U.K.

As the applicant is seeking additional sponsorship from other organizations besides the amount to be granted from IAPH (US$3,500), Chairman Stuart approved the application on condition that, if he is unsuccessful in this endeavor and cannot attend the UWIST course, the bursary money will be returned to IAPH.

President Mayne stops in Tokyo on his way to Vancouver

Mr. A.S. Mayne, President of IAPH and Chairman of the Port of Melbourne Authority, arrived in Tokyo on the evening of Wednesday, February 23 on his way to Vancouver, where he and First Vice-President A.J. Tozzoli, Director, Port Department, The Port Authority of New York and New Jersey will have a meeting with the Coordinating Committee members at the host port concerning the preparations for the 13th Conference of IAPH in June.

On the morning of Thursday, February 24, President Mayne visited the Head Office, for the first time since it was refurbished last year, and was met by Secretary General Sato and his staff. President Mayne was briefed by the secretariat members on the state of the preparations for the forthcoming Conference and other Association matters. On Monday, February 28, he boarded an afternoon flight for Vancouver to attend the meeting schedueld for February 28 and March 1.

Mr. R. Kondoh, Under Secretary, accompanied President Mayne from the Tokyo Head Office to participate in the meeting in Vancouver on behalf of the Secretary General.

Mr. Mayne and Mr. Tozzoli in Vancouver

President Mayne and 1st V/P Tozzoli together with Mr. R. Kondoh, representing Dr. H. Sato, Secretary-General, Mr. Bo A. Ekstrom, Atg. General Manager, Port of Vancouver, representing the Host Port for the 13th Conference, and Mr. F.J.N. Spoke, Chairman, Ms. Alison W. Flett, Coordinator, representing the Host Port's Conf. Coordinating Committee gathered on March 1, 1983, to discuss the overall conference proceedings and to inspect the conference sites and facilities at the Hyatt Regency Hotel and the Hotel Vancouver.

The day-to-day program, the business proceedings of the plenary sessions, working sessions and the services and facilities were reviewed at the meeting.

Expressing his appreciation of the strenuous efforts of the Host and voicing his satisfaction with the present state of preparations and with the improvements confirmed at the meeting, President Mayne said it was a good sign that, as of Feb. 28, some 90 delegates and 60 ladies had already registered for the Conference, well in advance of the closing date set for March 15. He went on to state that, now that the Host was fully prepared to receive the delegates and to make their stay in Vancouver meaningful and enjoyable, it was the sincere hope of all that the Vancouver Conference be attended by as many IAPH delegates as possible.

Port of Anchorage, Alaska, visited by IAPH Staff

On March 4, Mr. R. Kondoh of IAPH Head Office visited the Port of Anchorage and was received by Mr. Bill McKinney, Port Director, and Mr. Tyler Jones, Assistant Port Director, and was given briefings on the present situation of the Port of Anchorage, the biggest commercial port of Alaska. In his briefings, Mr. McKinney pointed out that the Port was fully operative throughout the year despite the mistaken but widely-held view that it was frozen in winter time and not open to general shipping. He added that Sea-Land and Totem Ocean Trailer Express serve the port regularly through the year. He further remarked that his Port would revive its IAPH membership in due course.

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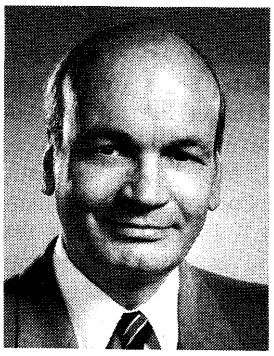

Mr. B.A. Ekstrom
Conference Chairman
Acting General Manager
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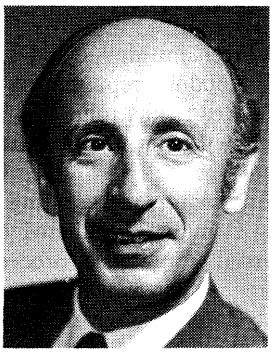

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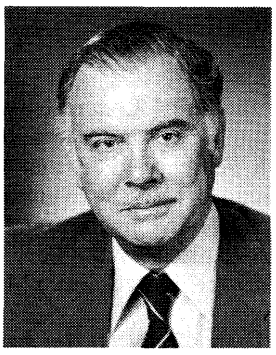

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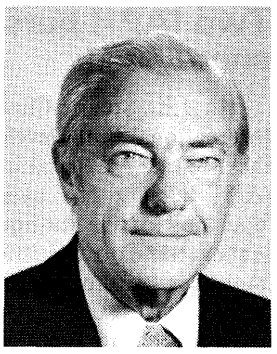

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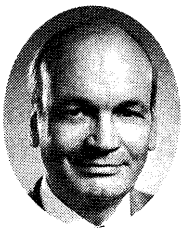

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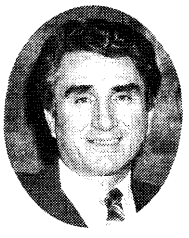

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Increase of the Bulk Cargo Unloading Rate by Means of the Technical Improvement of Grab Unloaders

By Josip Kirincic, DSc, Deputy Director, Development Department Port of Rijeka Work Organisation Yugoslavia

Contents

Introduction

Shore-based loading/discharge facilities are an essential element of port bulk cargo terminals, influencing largely the time of the ship's stay in port. Since the high capital value of modern ships and their operating costs allow minimum or practically no loss of time while in port, current scientific investigations in this particular field have been directed towards the study and settling of the technical and technological questions concerning the ship unloading systems.

It has been proved by numerous investigations into the possibilities for increasing the capacity of the port discharging and transport systems that the best results can be obtained at highly specialized bulk cargo unloading and transport facilities in ports. Starting from these basic considerations, the present research work, dealing with the improvements and modernisation of port bulk cargo systems, aims at a deeper study of the structural and technological characteristics of shipunloaders and their role within the entire internal transport of bulk cargoes. Continuous discharging systems have proved to be efficient for a limited number and types of bulk cargoes (e.g. cereals, phosphates, etc.). Attempts have been made recently to introduce the continuous systems reaching high unloading rates in the discharge of large vessels. As the ship unloading rate depends on a number of factors, each having a different impact, the continuous systems have not found a wide application in the discharge of iron ore in ports, though iron ore has the greatest share in the volume of transport of dry bulk cargoes by sea. Obviously, the size, structure, and shape of the ship presents a dominant problem in obtaining the desired results.

Today, the highest unloading rates in handling dry bulk cargo in ports are obtained by grab unloaders. Consequently, the investigations to improve the structural and technological elements of grab unloaders are focussed to the scientific study of ship unloading as a productive system.

This work therefore, is intended to determine the elements of a more rational operation in the discharge of ships.

1. Ship Unloading

In view of the numerous functional links tying the individual activities in the discharge of cargo from the ship, it was necessary for the research to be carried out on an existing system in operation. The Bakar Bulk Cargo Terminal in the port of Rijeka was chosen for the purpose. In order to determine the impact of individual components upon the final result and to determine the component alterations that would lead to the desired improvements, a number of recordings were made in the existing system, and the data thus obtained were analyzed. Such data have been used in verifying the behaviour of the system within the simulation model.

The Bakar Bulk Cargo Terminal consists of the following elements:

(a) ship unloaders
(b) coveyor system from the quay wall to the storage and unloading station
(c) storage gantry crane
(d) main distribution station
(e) rail car loading station.

For the discharge of cargo three ship unloaders are used, i.e. two 160 kN unloaders and one 450 kN unloader.

Here are the basic technical data of the unloaders:

Number	Pieces	2	1
Lifting capacity	kN	160	450
Grab volume (ore)	m^3	3.2	10
Grab volume (coal)	m^3	9.0	19
Grab slewing	ρ	90	90
Seaside outreach	m	30	40
Landside outreach	m	17	28

Crane span	m	15	15
Hoist height above sea level	m	15	21
Total hoist height	m	29	42
Derrick height	m	20.26	26.2
Hoist speed	m/s	1.67	1.83
Hoist acceleration	m/s^2	0.67	0.8
Trolley travel speed	m/s	3.33	2.92
Trolley travel acceleration	m/s^2	0.83	0.7
Unloading rate	t/h	560	1,600

Investigations into the problems of ship unloading have shown that there are numerous factors to be taken into consideration in order to make an assessment of the average real or operational unloading rate, based on the knowledge of the theoretical average rate. In smaller ships (up to 50,000 dwt) the utilization rate of the ship unloader has been found to amount 56%, whereas in larger ships (up to 100,000 dwt) this rate is about 70%. A further increase of the ship's size results in a lower rate, reduced roughly to 67 per cent. This fact can be accounted for by the change in the geometrical relations between the ship and unloader. In any vessel the unloading cycle (final cleaning of the holds excluded) depends on the length of the grab travel (both horizontal and vertical) between the grab grip point in the ship and the unloader-mounted hopper ashore. As ships are becoming wider and higher, the grab cycle time increases relative to the increase of the ship's size. With the increase of the grab travel length, the efficiency of the grab travel from the grip point in the vessel up to the quay is getting lower because the superposed part of the movement of the crane trolley does not increase before the hoisting of the fully loaded grab is terminated. The decrease in the efficiency of unloading large ships is therefore affected by the inadequate geometrical relations between the ship's size and the unloader.

Reduction of the weight of cargo in the ship during the discharge time has a considerable impact upon the time of the grab cycle as well. If the average numerical values resulting from the measuring records are inserted in the diagram of the unloading cycle, an analytic representation is obtained of the dependence of the grab cycle time during the process of discharge, as shown in Fig. 1.

The analysis of the data obtained from the time recordings of grab cycles shows an obvious increase of the cycle time during the discharge of the second half of the ship's contents, i.e. in unloading 50% to 100% of the ship's cargo.

This is the result of the worsening of the geometrical relations between the ship and the unloader, causing the grab travel time to increase as the grab moves along its average trajectory.

These empirical values have proved that the time of an average grab cycle determined by the existing methods is not equivalent to the time of an average grab cycle in a real ship unloading system.

It is evident that the reduction in the ship's weight, resulting from the discharge of the cargo, and the tidal variations normally cause continuous level alterations of the upper rim of the ship's hatch as well as of the initial point of the grab travel. This accounts for a permanent change in the trajectory of the material grab point within a closed system of grab trajectories.

Besides, the changes in the grab travel in the course of the discharge of the vessel largely depend on the position of the material (cargo) within the ship's hold, as the height of the material stowed in the ship determines the initial point of the grab travel. There are two essential factors determining the position and the height of the cargo in the ship's hold, i.e. type of the ship (bulk carrier, ore carrier) and the density of the material that is unloaded from the vessels (ρ = 0.8 to 3.0 t/m^3).

Consequently, the complexity of calculating the unloading rate of grab unloaders derives from the internal structure of the materials transport system on the one hand, and the specific external links of the system with the environment within which the system operates on the other.

In order to define the optimum parameters of the travel, speed, and acceleration of the grab, which are needed to reach the maximum unloading rate of the grab unloader, the investigations have been directed to the establishment of the methods for:

(a) shortening the grab travel (i.e. grab trajectory) to a minimum, and
(b) reducing the grab cycle time to a minimum.

2. Research Method

The very problem was reduced to a general form in order to allow the application of a theoretical hypothesis and thus introduce the values characterizing the operation of a real system.

Through the analysis of the operation of the grab during its travel from ship to shore and vice versa, the time of the grab cycle has been found to include three components:

- grab closing/opening time
- grab hoist/lowering time
- grab travel time.

The closing time of the mechanical grab depends on its structural design, which defines the length of the grab closing rope, as well as on the speed and acceleration of the rope, as these represent the characteristic design values of the unloader.

The hoist time of the grab is dependent upon the length of the hoist travel and on the hoist speed and acceleration of the grab.

Grab travel time depends on the length of the horizontal travel of the grab, as well as on the speed and acceleration of the horizontal movement of the crane trolley. Thus, the travel length, speeds, and acceleration (or deceleration) of the particular grab movements are the basic factors affecting the duration of the grab cycle. Therefore, these factors have been analyzed and examined through various criteria.

The discharge of the material from the ship's holds by means of a grab unloader is carried out at various distances and levels of the transport by grab. (Fig. 2): In order to obtain an optimum grab cycle time, one should take into account all the movements (paths) of the material point of the grab materialized on the vertical plane of the characteristic cross section of the ship's hold in the course of the discharge of the material (Fig. 3).

Theoretically, for the purpose of shortening the grab cycle time a simultaneous occurrence of both the vertical and horizontal movement would be doubt yield the best results. However, in a real system such cases can hardly be fully reached, for a longer time at least, due to the influence of the specific relations holding within and outside the system. This then represents the theoretical hypothesis for reducing the grab cycle time. As a result, it was necessary to establish a practical method that would approach the theoretical hypothesis as close as possible.

3. Simulation of the Grab Cycle

For the purpose of solving the problem, simulation investigations were carried out by with the assistance of a mathematical model of the ship unloading system, for a number of deliberately selected system variations and possible situations. The outcome of the simulation report analysis has allowed the author to define gradually the most favourable technical and technological characteristics of the grab unloader under given circumstances.

4. Results of the Research Performed on a Real System of Ship Unloading

The investigation of the grab cycle time by employing a mathematical model has revealed that this time depends on the following components:

- design of the ship unloader
- grab design
- ship characteristics
- discharge technology
- control of the discharge process (operation).

Each component has a different influence on the grab cycle time. The interdependence of these components results in the restrictions that affect the grab cycle time. As the components specified above are interdependent, some common conclusions can be drawn from the results of the investigations carried out.

If the results obtained from the study of the original data recorded in a real system and those deriving from the simulation of the grab cycle are compared to the mathematical model, one can obtain a quantitative difference of the total time of the grab cycle.

For the purpose of comparison, the original values of a real system, i.e. the Bakar Bulk Cargo Terminal, were used as input parameters. These include: the ship's size of 100,000 dwt and the lifting capacities of the unloaders (160 and 450 kN), see Table 1.:

Table 1.

Pos.	Description	Unit of measurement	Unloader capacity	
			160 kN	450 kN
1.	Theoretical average grab cycle time based on the classical method of calculation	sec.	58.15	61.12
2.	Average grab travel time based on the model	sec.	47.05	50.13
3.	Average grab cycle time calculated by the model for the improvement of grab characteristics	sec.	43.60	42.66

The average grab cycle time obtained by cycle simulation on the model, applying the same parameters (speed and acceleration), shows that if optimum grab trajectories are considered, the grab cycle time can be reduced by 19% in the case of the 160 kN unloader, whereas in the case of the 450 kN unloader, this time can be shortened by 18%.

The optimum grab cycle time, as shown, accounts for the application of the improved operational characteristics of the grab. The travel of the grab closing ropes is reduced from 10 m (for 160 kN unloader) and 14 m (for kN unloader) to 7.5 metres. The results of the simulated grab cycle show a further reduction of the grab cycle time. If this time is compared with the rated theoretical average time, provided that the classical calculating method using real speeds and acceleration of the unloader under study is applied, it can be found out that the optimum time of the average grab cycle in the 160 kN unloader is reduced by 25%, whereas in the case of the 450 kN unloader this time can be shortened by as much as 30.2%. The differences in the analysis of the average grab cycle can become even greater, if optimum values of speeds and accelerations (decelerations) in the movements of the grab are taken into consideration.

The average grab trajectory obtained by the mathematical model does not correspond to any real grab trajectory. The significance of such an average grab trajectory lies in the fact that the travel time of the grab following the course of this trajectory represents a real value that can be used in defining the grab cycle time as well as the unloading rate of the grab unloader under various ship unloading conditions, i.e. the changes of the geometrical relations between the ship and the unloader. The same trajectory can also be applied in the comparison of the quantitative and dynamic parameters of ship unloaders.

5. Reflection of the Research Results upon the Unloading Rate of the Grab Unloader

Provided that the grab is steadily filled with the material transported (m), the unloading rate of a grab unloader, as per relation

$$Q = n \cdot m \qquad t/h,$$

will be a function of the number of the grab cycles (n). This function, again, as per relation

$$Q = \frac{3{,}600 \cdot m}{\sum_{i=1}^{n} t_i} \qquad t/h,$$

is correlated with the grab cycle time (t).

Since the unloading (efficiency) rate of the ship unloader stands in opposite proportion to the grab cycle time, the results reached in reducing the average grab cycle time will cause an increase in the unloading rate of the grab unloader.

If the results of the investigations performed are applied to the determination of the unloading rate of the unloaders at the Bakar Bulk Cargo Terminal, by taking into account the ship's size of 100,000 dwt, and given at the same time the values of the particular parameters of the existing grab unloaders, then the following values of the unloading rate can be obtained.

Table 2.

Characteristics of the unloading rate of the grab unloader	Unit	Lifting capacity of the unloader	
		160 kN	450 kN
Unloading rate as per original terminal data and existing grabs	t/h	560	1,600
Unloading rate obtained by mathematical model, using existing grabs	t/h	688	1,939
Unloading rate obtained by mathematical model, using grabs with improved characteristics	t/h	743	2,447

The unloading rates calculated on the basis of the average grab cycle time, considering the original speed and acceleration parameters (i.e. those obtained at the bulk cargo terminal) as well as the existing grabs, indicate that if optimum grab trajectories are applied, the unloading rate of the 160 kN unloader will be increased by 23%, or by 21% in the case of the 450 kN unloader.

However, the unloader discharging rate can be further increased if grabs with improved technical and operational characteristics are used, as these allow for the reduction of the travel of the grab closing ropes. If compared to the unloading rate of the existing unloader of 160 kN lifting capacity, the unloading rate of such a technically improved unloader will increase by 32%, or even by 53% in the case of the 450 kN unloader.

It should be pointed out here that the differences in the increase of the unloading rate would become even greater if optimum speed and acceleration (deceleration) values for particular grab movements in the existing ship unloaders were applied in the calculation.

6. A Proposal for the Increase of the Unloading Rate in the Grab Unloaders at the Bakar Bulk Cargo Terminal

Should the described theoretical hypotheses be applied to the actual system of the Bakar Bulk Cargo Terminal, operated by the Port of Rijeka Work Organisation, it is obvious that the terminal unloading rate could be increased without the necessity for the acquisition of new ship unloaders. Table No. 2 provides a quantification of the results obtained with a vessel of 100,000 dwt. In the same table particulars are given for each unloader. The final objective, i.e. the increase of the cumulative unloading rate of the terminal from 2,720 t/h to a total of 3,930 t/h by means of a number of technical improvements, will largely influence the concept to the implementation of the rationalisation programme in the operation of the presently installed grab unloaders. Consequently, by means of the technical improvements proposed below the unloading rate of the existing ship unloaders could be increased by 44 per cent. These technical improvements include:

(a) replacement of the present mechanical grabs with new mechanically operated grabs of suitable volume with shorter closing ropes (e.g. Scissors-type grab with a rope travel of 7.5 metres), and
(b) introduction of the computer-aided automated control (mini-computer) of the process of ship unloading by means of grab-type unloaders.

7. Economic Effects Expected from the Technical Improvement of the Grab Unloader

The economic effect depends on the specific conditions of a particular terminal. Therefore, only the characteristic elements of the results that can be expected at the Bakar Bulk Cargo Terminal will be presented here.

The average operating time of each particular unloader at the Bakar terminal is about 4,300 hours per annum. By means of an average increase of the unloading rate by 44%, this time could be reduced by some 1,125 hours a year. In this amount of time about 750 hours refers to the process of ship unloading and about 375 hours to the delivery of cargo from the storage place at the terminal.

It is not the task of this work to carry out a complete economic analysis of the results reached, but an assessment of the expected effects of the improvements proposed can be made by stating the following:

- variable operational costs of the terminal can be lowered by reducing the annual operating time of the unloaders by 1,125 hours,
- the ship's stay in port can be shortened by a total of 750 hours, which directly reduces the ship demurrage time,
- or, the terminal capacity can be increased by 44 percent, without changing other operational conditions.

In order to attain the economic effects above, it is necessary to make the following investments for the technical improvement of the unloaders:

(a) purchase of three grabs	300,000 $US
(b) purchase and installation of the automatic control units in the three unloaders	500,000 $US
Total investment	800,000 $US

Should it be decided that the equivalent increase rate in vessel unloading be reached by the purchase of another ship unloader, the capital cost in such a case would be ten times higher (i.e. about 8 million US dollars).

Therefore, by means of the proposed technical improvements to be carried out on the present grab-type unloaders, the same objective could be reached at incomparably lower capital costs.

Conclusion

This work presents, in an abridged form, the application of the author's original method for an accurate assessment of the optimum grab cycle between any initial point of the grab within the ship and the end point of the grab travel at the ship unloader. It also provides the optimum average cycle for the given conditions in the process of vessel unloading. By means of the method described such quantitative results have been obtained that could be used efficiently in the study of the present and future grab unloaders in ports.

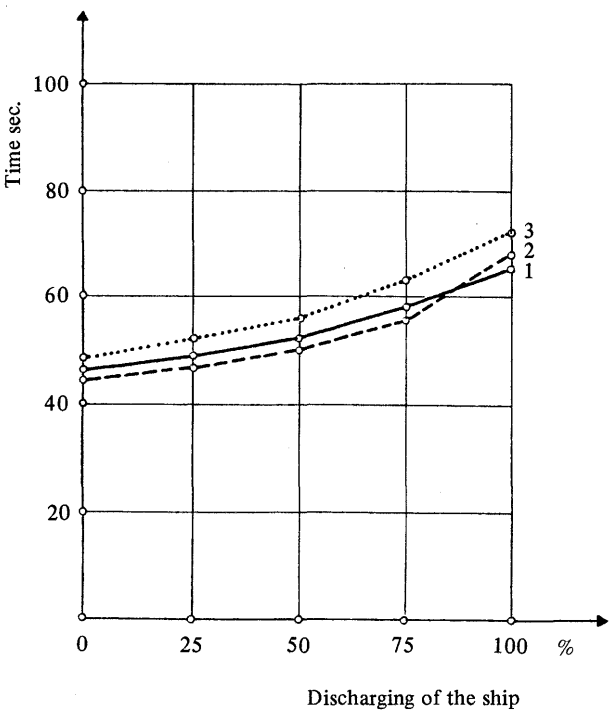
The calculation procedures, which have been carefully elaborated, enable the definition of the interrelationships governing all the variables affecting the travel and the time of the grab cycle, and consequently the unloading rate of the unloader.

The mathematical model of the ship unloading system allows the performance of the experimental research by means of computer simulations. By passing the unloading system through a number of possible situations for the selected varieties, it has been possible to create gradually a definition of optimum technical and technological characteristics of the grab unloader under given circumstances.

The method for defining the grab cycle and the mathematical model of the real system of ship unloading has a practical application in the introduction of automation employing a computer-controlled process of ship unloading by means of grab unloaders. If the results of these investigations were applied in the operation of the Barkar Bulk Cargo Terminal, provided that the above described technical improvements were carried out, the unloading rate of this terminal would be increased by 44 per cent.

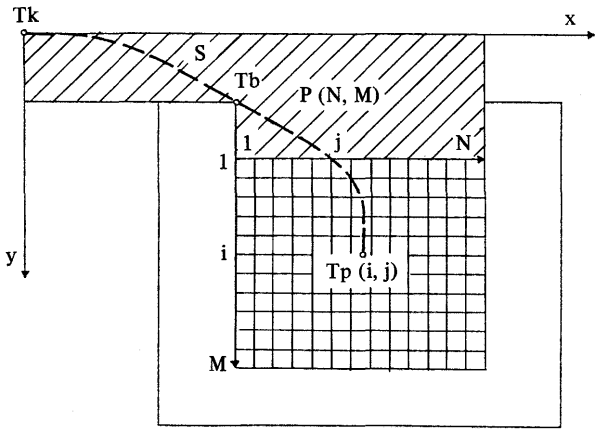
Moreover, by introducing optimum speeds and accelerations of both the vertical and horizontal movements of the grab, which of course requires a larger reconstructional work on the present ship unloaders at the terminal in Bakar, the average grab cycle time would be shortened to 35.3 seconds, which in turn would result in a 76 percent increase of the present unloading rate reached at the terminal.

Fig. 1 Average values of the shortest grab cycles



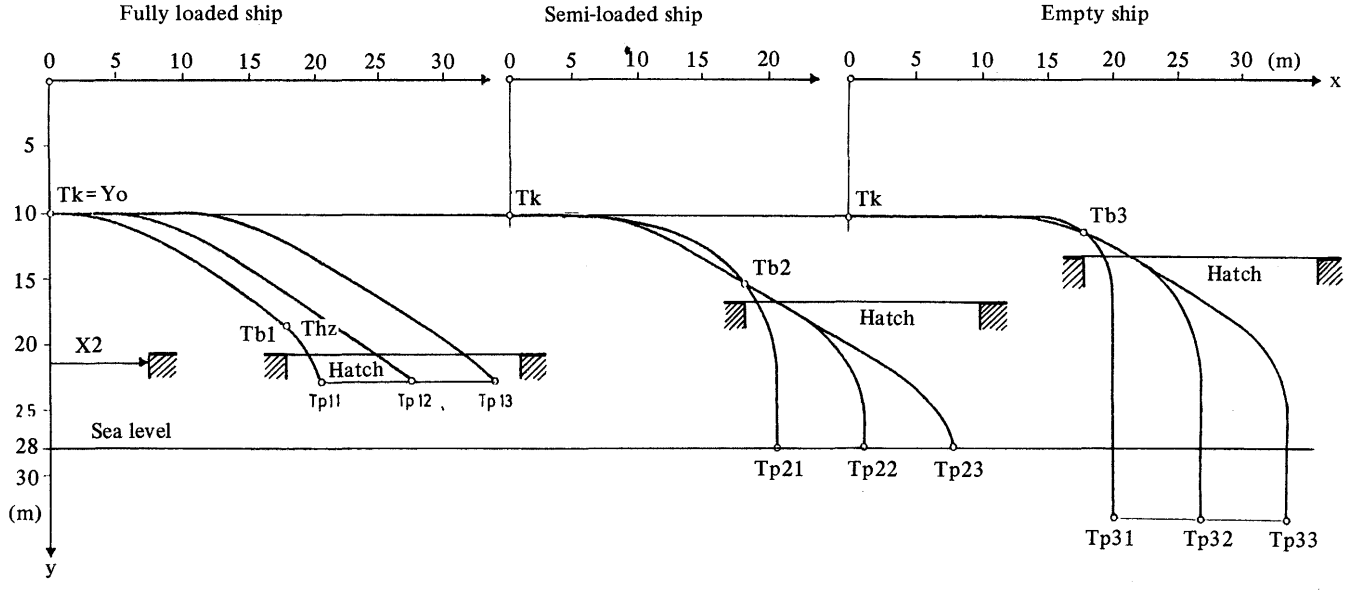
1. Ship type 35,000 – 45,000 dwt
2. Ship type 50,000 – 80,000 dwt
3. Ship type 100,000 – 110,000 dwt

Fig. 3 Schematic presentation of unloading a ship



P = Area of Grab Trajectories
S = Grab Trajectory
Tp = Initial Point of the Trajectory
Tk = End Point of the Trajectory

Fig. 2 Graphic presentation of the change of the grab trajectory depending on the initial point Tp (ij) and position of an 100,000 dwt vessel



Canadian Ports Legislation

Overview of 1982 Ports Legislation

The ports legislation passed by Parliament in August 1982, had the fundamental aim of establishing a balance between national objectives and local autonomy in the management of Canada's ports.

Included in the legislation is a statement of the national ports policy, which has the objective of creating a port system that:

- is an effective instrument of support for the achievement of Canadian international trade objectives and of national, regional and local economic and social objectives;
- is efficient;
- provides accessibility and equitable treatment in the movement of goods and persons to users of Canadian ports;
- provides local ports with a high degree of autonomy to manage and operate the ports, consistent with the responsibility of the Minister of Transport to ensure the integrity and efficiency of the national port system and the optimum deployment of resources; and
- is coordinated with other marine activities and surface and air transportation systems.

This common objective applies to the three types of commercial ports in Canada, all of which are affected in varying degrees by the legislation.

1. **Canada Ports Corporation ports.** The 15 National Harbours Board ports which handle about 50 per cent of Canada's waterborne commerce are in this category. The National Harbours Board is replaced by the Canada Ports Corporation, which will have greater powers in relation to the setting of rates and the level of contracting authority. The Corporation will recommend to the Minister those ports which it considers are eligible for local port corporation status, on the basis of national and regional significance, local interest in the management of the port, and the likelihood of financial self-sufficiency. Each local port corporation will be governed by its own board of directors, who will have a high degree of autonomy in the day-to-day management of the port, in personnel matters, and in the letting of contracts, as well as the appointing of a port manager.
2. **Public harbours and port facilities.** Over 500 smaller ports, handling about 20 per cent of waterborne commerce, fall under the Government Harbours and Piers Act. Legislative and administrative authority for these ports, previously devided between Transport Canada and Public Works Canada, is consolidated, and the legislation is renamed the Public Harbours and Port Facilities Act.
3. **Commission harbours.** Established under the Harbour Commissions Act of 1964, these seven ports plus Toronto and Hamilton (under separate statutes) handle about 20 per cent of waterborne commerce. (The remaining 10 per cent is handled at private facilities.) The amended legislation provides that other types of ports may become harbour commissions by Order-in-Council, instead of by legislative amendment, as was previously required. Other changes in status among the three types of ports continue to be possible, as before, by Order-in-Council.

Finally, the legislation provides for consultative bodies known as regional advisory councils. The councils will have wide representation and will ensure that the views of all parties interested in port matters are discussed and brought to the attention of the Minister of Transport.

The Canada Ports Corporation

Ports Canada

The bulk of the 1982 ports legislation is devoted to establishing the Canada Ports Corporation and to describing its structure, its powers and its operation. The Canada Ports Corporation, which will be known as Ports Canada, replaces the National Harbours Board (created in 1936) and possesses the powers of a modern-day Crown Corporation. The Canada Ports Corporation Act embodies the objective of the national ports policy and provides for the creation of local port corporations with a high degree of autonomy.

A 17-member Board of Directors has been created to manage the Corporation in accordance with the Act and the national ports policy. Its powers include the making of bylaws (with the approval of the Governor-in-Council) for the administration, management and control of the harbours under its jurisdiction. These bylaws will provide for a realistic level of contracting authority, previously constrained under the National Harbours Board Act. Ports Canada will have the exclusive power to set charges for services within the boundaries of its ports. Harbour dues, however, will continue to be set by bylaw.

Local port corporations

Ports seeking a more autonomous status will apply to the Ports Canada board. These ports will be considered against the criteria of national and regional significance, local interest in managing the port in question and the likelihood of financial self-sufficiency.

After proper review of the applications, Ports Canada, where the case warrants, will petition the Minister for the establishment of a local port corporation. The Minister, with the approval of the Governor-in-Council, will then issue letters patent of incorporation under his seal of office.

Local port corporations will have their own boards of directors, whose members are appointed part-time, by Order-in-Council, on the recommendation of the Minister of Transport, after consultation with the board of Ports Canada.

Local port corporations will be responsible for operating and managing their respective ports. The local corporations will have authority in property management, contracting and tendering, personnel and other operating powers required to administer their ports. Local port corporations will originate their own bylaws, for Governor-in-Council approval, on the recommendation of Ports Canada. The local board will be able to appoint its own port manager, who is the chief executive officer for the local port corporation.

Divisional ports

Ports which do not attain local port corporation status (non-corporate ports) will be operated as divisions of Ports Canada. For these ports, local advisory committees may be

established to provide advice to Ports Canada on the development and operation of their ports. These local advisory committees will consist of three to five members, appointed by the Minister from among those who live in the vicinity of the port.

Financial management

An objective of the Canada Ports Corporation is to achieve and maintain a position of financial self-sufficiency. The legislation describes the conditions under which Ports Canada and local port corporations manage their revenues.

Ports Canada may borrow from a local port corporation, for a period agreed upon in advance, taking into account the local port's capital program, an amount of money the two consider to be surplus to the local port corporation's capital needs. Any funds so loaned will be treated as if they were deposited in a bank, will earn interest, and will be returned at the end of the agreed period. Similarly, Ports Canada may loan funds on deposit to other Ports Canada ports. Ports Canada thus acts as a banker, and is able to make the best use of cash available in the national port system.

Both Ports Canada and local port corporations may borrow money from the government, as long as it is for the purpose of attaining the objective of the national ports policy.

There is also a provision in the legislation for the government to give direction to the Corporation for the advancement of national interests, and the Corporation must comply. However, in keeping with the objective of financial self-sufficiency, it will be possible for the Government to reimburse the Corporation for losses incurred in complying with such directions, and is required to table such directions in Parliament for public scrutiny.

Transition

Within 18 months of the Canada Ports Corporation coming into force, the board of Ports Canada is required to review all former NHB ports and decide which ports satisfy the criteria for achieving local port corporation status. It is expected that several major ports will be granted local port corporation status well before the end of this transitional phase.

From East to West, the ports of Ports Canada are:

St. John's Nfld.,
Halifax, N.S.,
Saint John, N.B.,
Belledune, N.B.,
Sept-Iles, Qué,
Chicoutimi, Qué,
Baie des Ha! Ha!, Qué.,
Québec, Qué.,
Trois-Rivières, Qué.,
Montréal, Qué.,
Prescott, Ont.,
Port Colborne, Ont.,
Churchill, Man.,
Vancouver, B.C.,
Prince Rupert, B.C.

Canada Ports Corporation Board

Transport Minister Jean-Luc Pepin announced the members of the Board of the new Canada Ports Corporation today. Legislation creating the Corporation was passed by Parliament in August, 1982, and will be in force by proclamation on February 24, 1983.

The Canada Ports Corporation replaces the National Harbours Board. Former NHB ports will have the opportunity to achieve a greater degree of autonomy through the creation of local port corporations.

The four-member National Harbours Board is replaced by a seventeen-member Board of Directors. The new Board is required, by legislation, to be composed of persons who "have the experience and capacity required for discharging their functions and are representative of national, regional and local interests."

The Board of Directors consists of a chairman, vice-chairman, president and no more than fourteen other directors. All serve on a part-time basis except the president, who is a full-time officer of the corporation. The term of the directors, other than the president, is a maximum of three years. The president is appointed for up to seven years. All directors are appointed by Order-in-Council.

The Chairman of the Board is Mr. Glenn W. McPherson, of Vancouver, associated for a number of years with the Port of Vancouver as member and later Chairman of the Vancouver Port Authority.

Mr. A.C. Huxtable, of Halifax, is Vice-Chairman of the Board. Mr. Huxtable has extensive experience in marine transportation, and is a member of the Halifax Port Authority and Halifax/Dartmouth Port Commission.

Mr. Jacques Auger, of Aylmer, Québec, is appointed President and Chief Executive Officer of the Canada Ports Corporation. Mr. Auger was Vice-Chairman of the National Harbours Board, since 1978 and has been acting as Chairman since July, 1982.

Members of the board:

Mrs. Marian L. Robson, of Richmond, British Columbia, a member of the National Harbours Board.

Mr. John H. Morrish, of Calgary, Alberta, President and Chief Executive Officer of Fording Coal Ltd.

Mr. J.S. Thompson, of Ormiston, Saskatchewan, President and General Manager of Ormiston Mining and smelting Ltd.

The Honourable Otto E. Lang, of Winnipeg, Manitoba, former federal Minister of Transport and now Executive Vice-President of Pioneer Grain Ltd.

Mr. William H. Somerville, of Stratford, Ontario, President and Chief Executive Officer of Victora and Grey Trust Company.

Mr. Roméo Boyer, of St. Lambert, Québec, President of Québec Grues Ltée and Chairman of the Montréal Port Authority.

Mr. James L. Thom, of Montréal, Québec, President of Montréal Shipping Company Limited and member of the Montréal Port Authority.

Mr. Raymond M. Dufour, of Québec City, Québec, a management consultant with the firm Mallette, Benoît, Boulanger, Rondeau Inc.

Mr. Lionel Major, of Chicoutimi, Québec, Director General of Inter-Cité Construction Limitée and Chairman of the Chicoutimi Port Authority.

Mr. Wendell J. Firlotte, of Dalhousie, New Brunswick, mechanical superintendent of the Woodlands Division of New Brunswick International Paper Inc.

Dr. Stephen Weyman, of Saint John, New Brunswick, a member of the National Harbours Board since 1973.

Mr. Ian Stott, of East Bay, Nova Scotia, President of Stott Aluminum.

Mr. Robert W. Innes, of St. John's, Newfoundland, Chairman of the St. Johm's Port Authority.

Mr. Alastair W. Allan, administrator of the Marine Administration of Transport Canada.

"The board has an excellent range of experience in port operations and business management, as well as good local

and regional representation from across Canada." Mr. Pepin said. "It can be expected to govern the Corporation in a responsive and effective manner."

"One of the first tasks of the board will be to consider applications from ports for local port corporation status," Mr. Pepin added. "I hope to see at least some local port corporations created within the next three or four months."

The Minister emphasized the importance of having established a sound administrative structure for Canada's ports. The new structure will facilitate the delivery of major capital investments in port facilities planned for the coming years.

"The Government recently announced its intention to change the Crow's Nest Pass freight rates, and enable massive investments in the country's rail system. With these two initiatives underway," he concluded, "Canada can look forward to a first-class transportation system which will maintain and enhance its reputation as a reliable supplier to export markets."

Public Harbours and Port Facilities

The Public Harbours and Port Facilities Act, part of the 1982 ports legislation, consolidates legislation governing these facilities previously contained in the Government Harbours and Piers Act, and in the Canada Shipping Act with respect to the proclamation of public harbours and the appointment of harbour masters and wharfingers. The legislation is made consistent with other ports legislation by defining the powers of the Minister of Transport. The Minister is expected to recommend to the Governor-in-Council regulations for the management, control, use, and development of public harbours.

More effective administration and development of public harbours will result from the transfer, under the legislation, of responsibility for major maintenance and investment programs from Public Works Canada to Transport Canada. Public Works will be retained as the supplier of design, construction and realty services for public harbours and associated dredging within the limits of these facilities.

The responsibility for the management of these facilities will remain with the Marine Administration of Transport Canada. A headquarters staff will provide a central focus for port policy and planning. However, the regional staff responsible for operation and management are delegated greater authority and their resources are strengthened to meet the requirements of users. Greater emphasis will be placed on the development of regional capital investment plans to make public harbours a more dynamic element of the national port system.

Advisory councils may be established at such public harbours as the Minister may designate.

Harbour Commissions

The 1982 ports legislation makes only minor amendments to the Harbour Commissions Act of 1964, since it is the most modern of existing ports legislation, and already responds in large measure to the objective of the national ports policy.

The amended Harbour Commissions Act incorporates the objective of the national ports policy, and in accordance with this objective, harbour commission chairmen will be members of the regional advisory council established for their region.

Another amendment permits any port to transfer by Order-in-Council to harbour commission status. Previously, an amendment to the legislation was required. To become a harbour commission, however, a port will have to be financially self-sufficient, and due consideration will be given to the impact of the transfer on the national and regional port and transportation systems.

The harbour commission ports are:
Oshawa, (Ont.),
Windsor, (Ont.),
Thunder Bay, (Ont.),
Fraser River, (B.C.),
North Fraser River, (B.C.),
Port Alberni, (B.C.) and Nanaimo, (B.C.), plus
Toronto and Hamilton (under separate statutes).

Consultative bodies on Port matters

The 1982 ports legislation contains a provision for the creation of regional advisory councils. Consultative bodies for certain individual ports are also provided for.

Regional advisory councils are in the process of being considered for establishment in five regions, including Western Canada, Central Canada, Quebec, the Maritimes and Newfoundland.

Under the legislation, each regional advisory council advises the Minister of Transport on planning and development of ports in its region, and on port matters of regional significance.

A regional advisory council is composed of:
- the chairman of each local port corporation in the region;
- the chairman of each harbour commission in the region;
- the chairman of each local advisory committee at a non-corporate port (see below) in the region;
- one member appointed by each province in the region, or, with the approval of the Minister, more than one member;
- users, employees and other interested persons as are appointed by the Minister; and
- an officer of Transport Canada designated by the Minister (who could represent the public harbours and port facilities in the region).

It is expected that these councils will provide an opportunity for effective consultation between different organizations and individuals involved in port activities, and form the basis for sound, coordinated planning and development of the national ports system.

Also provided for in the legislation are local advisory committees for Canada Ports Corporation ports that do not achieve local port corporation status. These are the so-called non-corporate or divisional ports. (As local port corporations will have boards of directors with local representation, local consultative or advisory bodies were not deemed necessary.) Local advisory committees are composed of three to five persons, appointed by the Minister for terms of no more than three years, and residing in the vicinity of the port. Their duties include advising and making recommendations to the Canada Ports Corporation on the planning and operation of their respective ports.

Likewise, the Minister may establish advisory councils at public harbours under the Public Harbours and Port Facilities Act. The structure and duties of these councils are similar to those of the local advisory committees.

Port of San Diego

(Extracts from San Diego Unified Port District 1981-82 Annual Report)

The fiscal year ended June 30, 1982 was characterized by undiminished progress and development on San Diego Bay tidelands. Enhancement of existing public recreational areas, revitalization of commercial sites and significant improvements in transportation facilities were carried forward despite a general downtrend in the national economy.

This Commission has been especially conscious of its responsibilities for maintenance of the aesthetic quality of the Bay and the 33 miles of shoreline under its jurisdiction. Increased emphasis was placed on the completion of beautification projects and planning for new efforts of even greater scope. The Crescent area of the Embarcadero, near the foot of Laurel Street, has received a great deal of attention. Plans include the replacement of the now decaying seawall between Hawthorn Street and the U.S. Coast Guard Air Station, a new path for joggers, bikers and strollers, a renovated parking strip and a redesigned anchorage area immediately offshore. A precursor to this larger effort is one calling for new landscaping and replacement of the irrigation system in the Harbor Drive median from Hawthorn Street to Navy Estuary Bridge.

Since the Port's inception, Commission members and staff have been acutely aware of the critical nature of Coronado tidelands. Resting on the west bank of the Bay these sites form the natural focus for recreational and tourist oriented activities in that section of the Bay. Exhaustive gathering of facts, public testimony and expert opinion by a joint committee of City of Coronado and Port officials during the year resulted in a determination to draw up Requests for Proposals for a park and a commercial site at the foot of B Avenue in Coronado and for a hotel at the foot of Second Street.

Not only will the Port District soon be engaged in a near total renovation of the public areas of Shelter Island and its approaches, but changes in several tenancies also will take place.

During the fiscal period, Atkinson Marine added a floating pier to its ship repair installation at the National City Marine Terminal and commenced seeking environmental approval for construction of a full-service pier at a cost of $20 million. The Sheraton Harbor Island Hotel was enlarged 250 rooms by a $20 million project completed during the year. Construction was begun on Torrey Enterprises' $250 million Inter-Continental Hotel on Navy Field at the foot of Fifth Avenue in San Diego. And General Dynamics announced a major rehabilitation of the Convair aviation manufacturing plant located at Lindbergh Field, with final cost projected at $30 million.

In addition to improvements in the East Terminal passenger handling facilities at the international airport, continuing attention was paid to the operational safety features of the field with resurfacing of the main service runway and placement of new centerline lighting, now a familiar evening sight to motorists traveling north on I-5. The elaborate noise monitoring system housed in the West Terminal structure was the subject of improvement with addition of even more sophisticated devices for identifying problem areas in efforts to abate jet aircraft noise, particularly in residential locations.

I would be remiss, as the reporting officer of the Commission, to neglect thanking my fellow Commissioners for their dedication and cooperation. In all candor, I must report that deliberations of the Port Commission are not to be described as weekly demonstrations of uncontroverted unanimity or even consistent agreement. Rather, these occasions, open to public presentation of ideas by individuals or groups, have become a forum for the healthy and productive exercise of open determination of public affairs by those most affected by such decisions.

1982 marks the end of the second decade of the San Diego Unified Port District. It has been a fruitful and challenging year and one during which your Port Commission has been pleased and proud to serve.

Louis M. Wolfsheimer
Chairman

Statements of Operations

Years ended June 30, 1982

	1982	1981
Operating revenues:		
Marine operations	$ 3,682,244	$ 3,560,904
Airport operations	14,185,701	12,280,630
Property operations	15,342,409	12,054,896
	33,210,354	27,896,430
Operating expenses, including depreciation:		
Direct expenses	16,382,384	14,233,686
General and administrative expenses	4,288,520	4,537,583
	20,670,904	18,771,269
Income from operations	12,539,450	9,125,161
Non-operating income (expenses):		
Interest income	9,094,181	6,932,349
Grant-in-aid, Federal and State	1,189,655	5,696,659
Other non-operating income	514,507	386,594
Interest expense	(1,367,791)	(1,444,400)
	9,430,552	11,571,202
Net income	21,970,002	20,696,363
Available balance, beginning of year	27,458,591	14,114,391
	49,428,593	34,810,754

(Continued on next page)

Ports of Kenya

(Extracts from Annual Report and Accounts for the period 1st January to 31st December 1980, Kenya Ports Authority)

Port operations

Traffic throughput, shipping and passenger traffic during 1980

In 1980, the turning point from the decade of the 70s, the traffic handled through the port of Mombasa reached an unprecedented peak of 7,511,000 tonnes. In comparison to the 5,941,000 tonnes handled in 1979, the 1980 volume of traffic reflected a rise of 26.43 per cent. This rise in traffic volume is mainly attributable to the very significant increase in dry bulk imports from 160,211 tonnes handled in 1979 to 656,849 tonnes in 1980 – a rise of 310 per cent. Imports of dry general cargo, on the other hand, rose by 53.6 per cent from 876,656 tonnes to 1,346,570 tonnes during the same period. Total imports had a general increase of 41.8 per cent between 1979 and 1980. As if to counter this upward trend, exports of dry general cargo declined by around 15 per cent from 1,013,682 tonnes handled in 1979 to 864,107 tonnes in 1980. Dry bulk cargo and the bunker oils similarly declined by 2.7 per cent (from 589,526 tonnes to 573,785 tonnes) and 32.7 per cent (from 235,411 tonnes to 158,387 tonnes) respectively. Exports of bulk petroleum oil, however, showed a notable rise of 107.9 per cent from 173,805 tonnes handled in 1979 to as much as 361,323 tonnes in 1980. Total exports ultimately showed a marginal decline of only 2 per cent, declining from 2,077,512 tonnes to 2,036,383.

The number of ship arrivals registered a drop of nearly 3 per cent from 1,493 ships in 1979 to 1,449 in 1980. Despite the fall in ship arrivals, there was a rise in both the Net Registered Tonnes (NRT) and Gross Registered Tonnes (GRT) the former by 9.75 per cent and the latter by 21.14 per cent. This apparent contradiction indicates that bigger sizes of ships called at Mombasa in 1979 than in 1980. In the year under review, the number of passengers who disembarked or embarked at the port of Mombasa increased from 101 in 1979 to 182 in 1980. This rise of 80 per cent was occasioned by an increase in the number of passengers who disembarked which rose by 82 from 96 to 178 – a rise of 85.4 per cent – in that period.

Traffic Trends

Over the ten year period, total traffic rose from 6.4 million tonnes to 7.5 million tonnes thus showing a growth of 1.7 per cent per annum.

(Continued from page 19)

Balance sheet

June 30, 1982

Assets

	1982	1981
Land, facilities and equipment, net	$145,362,079	$136,156,878
Current assets:		
Cash and short-term investments	52,587,442	39,294,716
Receivables, less allowance for doubtful accounts of $23,474 in 1982 and $30,579 in 1981	3,448,272	2,162,512
Inventory of materials and supplies at average cost	235,702	99,790
Total current assets	56,271,416	41,557,018
Restricted assets:		
Bond construction:		
Cash and short-term investments	7,889,708	12,025,941
Deferred charges	482,610	552,253
Debt redemption:		
Cash and short-term investments	3,262,378	3,224,304
Trust:		
Cash	–	772,396
Receivables	–	145,808
Total restricted assets	11,634,696	16,720,702
Other assets, at cost less amortization	361,676	377,615
	$213,629,867	$194,812,213

Liabilities and District Equity

	1982	1981
Long-term debt, excluding current portion	$ 26,220,000	$ 28,235,000
Current liabilities, payable from current assets:		
Accounts payable	1,943,662	2,359,102
Accrued liabilities	1,130,370	1,012,405
Deposits	572,600	152,492
	3,646,632	3,523,999
Current liabilities, payable from restricted assets:		
Current portion of long-term debt	2,015,000	1,890,000
Construction contracts payable	209,500	502,961
Accrued interest	207,293	220,905
Total current liabilities	6,078,425	6,137,865
Deferred income	201,032	360,736
Trust liability	–	918,204
Total liabilities	32,499,457	35,651,805
District equity:		
Restricted balances:		
Equity in land, facilities and equipment	127,304,897	119,997,111
Debt redemption	1,040,085	1,113,399
Reserve for encumbrances	10,673,720	10,591,307
Available balances	42,111,708	27,458,591
Total district equity	181,130,410	159,160,408
Contingent liabilities and commitments		
	$213,629,867	$194,812,213

Imports grew by 3.75 per cent per annum over the same period – rising from 4 million tonnes to 5.5 million tonnes. Exports, however, showed a decline of 1.7 per cent per annum and thereby dropped from a level of 2.4 million tonnes to around 2 million tonnes. The five year period, however, shows an annual growth of 5.4 per cent in total traffic (rising from 5.9 million tonnes to 7.5 million tonnes). It is to be noted from the bar chart that the period is characterised by an almost constant level of exports at 2 million tonnes. Imports, in contrast, rose from 3.9 million tonnes in 1976 to 5.5 million tonnes in 1980 thus recording an annual growth of 8.2 per cent. The marked growth in imports is mainly attributed to increased importation of grains (particularly maize and wheat) and fertilisers.

Dry General Cargo Handling

The 1980 figure of 2,215,000 tonnes in respect of dry general cargo (including transhipment) represents an increase of 16.9 per cent over the 1979 volume of 1,895,000 tonnes. Although exports declined by some 15 per cent over the period the resultant increase in the total dry general cargo was consequent upon the higher rise of 53.6 per cent in respect of dry general cargo imports which rose from 876,656 tonnes in 1979 to 1,346,570 tonnes in 1980 – both figures exclusive of transhipment tonnage. As stated earlier, the high import tonnages are attributable to increased imports of such commodities as maize, wheat and fertiliser.

The volume of dry general cargo accounted for 29.5 per cent of total cargo in 1980 as compared to 16.4 per cent in respect of dry bulk cargo and 54.1 per cent for bulk liquid cargo.

Dry general cargo imports accounted for 17.8 per cent of total cargo and 24.6 per cent of total imports. Exports of dry general cargo, on the other hand, represented 11.5 per cent of total cargo and 42.4 per cent of total exports.

Container Traffic

In the year under review, container traffic reached a peak of 30,660 Twenty Foot Equivalent Units (TEUs) as against a traffic level of only 15,149 TEUs in 1979. This was equivalent to a growth of as high as 102.4 per cent which is surpassed only by the phenomenal growth of 155.8 per cent recorded between 1975 and 1976 when container traffic increased from 1,298 TEUs to 3,320 TEUs. It is interesting to note that the figure of 30,660 TEUs recorded in 1980 is around 10 per cent higher than the forecast of 28.000 TEUs which was to be achieved during the terminal year (1980) of stage I of the Containerisation Development Programme. Stage II level of 60,000 TEUs was forecast to be reached by 1990.

Income and expenditure account

for the year ended 31st December 1980

	1980 K.Shs.000's	1979 K.Shs.000's
Operating revenue		
Shipping	71,608	34,759
Stevedoring	168,461	–
Wharfage	372,461	280,624
Handling cargo	134,190	243,801
Penalty storage	87,242	61,771
Other operating revenue	42,975	28,724
Net revenue account receipts	54,165	47,281
Total operating revenue	931,104	696,961
Operating expenditure		
Abstract "A" shipping	40,174	32,680
Abstract "B" stevedoring	213,490	–
Abstract "C" wharfage	75,548	58,782
Abstract "D" handling cargo	105,740	257,957
Abstract "E" storage	1,512	1,844
Abstract "F" general charges	86,933	40,338
Abstract "G" miscellaneous expenditure	43,089	65,519
Net revenue account charges	1,544	2,188
Total operating expenditure	568,033	459,311
Surplus for the year	363,070	237,650

Balance sheet

as at 31st December 1980

	1980 K.Shs.000's	1979 K.Shs.000's
Assets employed:		
Fixed Assets		
Berths, wharves & jetties, shore plant equipment, buildings, floating craft and other assets	1,837,174	1,660,311
Less accumulated depreciation	742,903	682,068
Net fixed assets in operation	1,094,270	978,243
Add works in progress	90,393	137,892
Total fixed assets	1,184,664	1,116,135
Investment:		
Short term investment	570,000	440,000
Trade investment	4,572	2,694
General investment	140,000	80,000
Pension fund investment	95,048	52,640
Total investments	809,620	575,334
Current assets:		
Stores stock	20,813	17,795
Less provision for obsolescence	1,758	1,458
Net value of stores stocks	19,055	16,336
Cash balances:		
Cash and bank balance	132,288	120,844
Cash with crown agents	14,509	7,830
Total cash balance	146,797	128,675
Sundry debtors:		
Traffic account outstanding	71,810	62,120

(Continued on next page)

Department of Marine and Harbors

(Extracts from Annual Report 81/82, Department of Marine and Harbors)

Director-General's report (extract)

The Department undertakes responsibilities as the port and marine authority for South Australia and, thus, has a wide-ranging area of administration. Our obligations involve continuing contact with the maritime industry in Australia and overseas and very close relationships with South Australian exporters and importers, organisations such as the Chamber of Commerce and Industry, the Australian Fishing Industry Council, various Industry bodies, Federal and State agencies, Local Government bodies, recreational boating interests and others. Industrial relations on the waterfront are of significant importance and, thus, we have an ongoing liaison with a number of Trade Unions whose members service the State's port and harbours. All of these relationships are fundamental to the implementation of the Government's policies in sea transport and maritime affairs, and it is fair to report that we have received a great deal of assistance from all organisations. We are pleased with the open and cordial relations which exist and will continue to strive to enhance these relationships.

Total trade through all South Australian ports for the year was 15.4 million tonnes and this represented a reduction of 8.3 per cent or 1.4 million tonnes on figures for the previous twelve months. The reduction in tonnage occurred mainly at the private ports of Whyalla, Ardrossan, Rapid Bay and Port Stanvac, and reflects current economic conditions. In addition, a decrease of some 300,000 tonnes was experienced in grain shipments. The decrease in bulk commodity shipments was offset to some extent by increases in general cargo shipments, including a substantial increase in container shipments from the Port of Adelaide.

Revenue from all sources was $25 million and this more than offset management and operating costs of $17 million. The resultant surplus of $8 million was insufficient to meet allotted charges of $11.8 million for interest, debt redemption and superannuation contributions. I have reported in previous years my belief that Government accounting practices in relation to these allocated investment-type charges require reveiw. This is particularly the case where ports are operating in an increasingly competitive situation, and where, eventually, port charges will be recovered in the selling of products. Marine and Harbors provides a range of services, e.g. in maritime affairs and for the fishing industry, which are non-commercial, or which produce minimum revenues, and if some allowance is made for these factors and the incidence of allocated charges, then the commercial ports will financially approach a 'break-even' situation.

The adequacy of shipping services to meet the needs of the South Australian economy continues to be a significant area of Departmental activity. The Australia/Europe Shipping Conference services (cellular and RO/RO) linking South Australia with important markets in Europe and Scandinavia were well supported by shippers during the year. This has been an important demonstration of shipper support in view of the Conference decision last year to establish a trial scheduled cellular container vessel service from the Port of Adelaide. This was confirmed in April this year as a permanent service.

Efforts to establish the Port of Adelaide as a scheduled port in the Japan/South Korea trade have continued and there is a real prospect of success in this important trading region. The work undertaken continues to be a truly South Australian task, with leadership from Government and working participation from shippers (exporters and importers) through the S.A. Shipping User Group, the Chamber of Commerce and Industry and the Department.

South Australia possesses what may be regarded as a unique asset in the largely reclaimed industrial lands adjacent to deepwater shipping channels at the Port of Adelaide and Port Pirie, and, during the year, Government has approved of steps being taken to augment the resources utilised in the ongoing development of the estates. This particularly refers to work undertaken to attract investment by port-related industries, where the Department can point to some recent successes.

In maritime affairs, the Department continued with its representation at Commonwealth/State level on a range of matters affecting the seas under the control of the Minister. These included safety aspects, national marine agreements and matters encompassed by international maritime conventions for possible incorporation in State legislation or ports regulations or rules. Shipping safety matters and the protection of the State's seas and adjacent coastline are

(Continued from page 21)

Less provision for bad & doubtful debts	4,334	3,975
Net traffic account outstanding	67,476	58,144
Accrued interest on investments	36,385	20,983
Other debtors	57,894	42,570
Total debtors	161,756	121,698
Total current assets	327,609	266,711
Less current liabilities:		
Creditors and accrued charges	54,706	61,089
Net current assets	272,903	205,621
Total Assets Employed	2,267,188	1,897,092
	1980	1979
Financed from:	K.Shs.000's	K.Shs.000's
Public debt		
Loans	331,027	353,995
Less invested sinking fund	11,359	8,949
Net public debt	319,667	345,045
Provisions:		
Staff pensions	103,756	89,094
Loan Redemption	11,359	8,949
Gratuities and Provident Fund	3,289	3,336
Fixed Assets Obsolescence	1,041	4,647
Insurance provision	6,061	5,611
Total provisions	125,509	111,638
Reserves:		
General	1,527,928	1,149,386
Assets Revaluation	288,744	288,753
Appropriation account	5,338	2,268
Total reserves	1,822,011	1,440,408
Total funds employed	2,267,188	1,897,092

important aspects of marine administration, particularly in a State with an economy dependent on sea transport and with a coastline of some 3,700 kilometres.

The State's ports have been adequately maintained during the year, although necessary financial constraints do require a more refined selectivity in determining those projects which have priority. The State's port system, including the landside facilities operated by the Department, require ongoing development to meet the changing need of industries utilising our ports and developments in world shipping technology. The Government has approved plans for channel and harbour improvements at Port Pirie and this major work will commence during 1982-1983.

In addition, planning is proceeding for the provision of a second container crane, the evaluation of options for the development of the port of Thevenard to meet the requirements of the gypsum and grain industries, and possible ports improvements necessary in the longer term to service the larger classes of bulk carriers expected in the grain trades. We continue to provide professional engineering input into the design and construction of the new port facilities at Stony Point, which will come under Government ownership early in 1984, and maintain a close working relationship with the Steering Committee and Asahi Chemical Industries Ltd on port infrastructure requirements for a possible petro-chemical plant, now under feasibility study.

The Department has continued its work in providing facilities (havens, slipways, etc.) for the fishing industry and has completed studies for a major project at Robe in the south-east of the State.

Work associated with recreational boating facilities continues, with the major project, for the provision of a boat launching and retrieval facility on the metropolitan south coast, reaching a stage where tenders for the work may be called early in 1982-1983.

The Department monitors the legislation governing its areas of administration and, during the year, recommended amendments to Acts or Regulations where this was considered necessary.

The organisation of the Department and the development of staff and key personnel continues to receive management attention. Our seaport system, the adequacy of shipping services and protection of our seas are all fundamental to the continuing development of South Australia and the Department must continually strive to equip itself to meet its important obligations. The resources required include not only skilled professional and technical manpower, but modern business systems able to assist management decision-making in the business of our commercial ports. The Department has raised a number of organisation development proposals with the Public Service Board and will continue to press such matters. Substantial progress has also been achieved in the evolution of a computer data based shipping and financial information system, and we now have a real expectation that the recommended systems will commence implementation prior to December 1982.

Representation in international and national organisations concerned with seaports, shipping, cargo handling facilities and techniques has continued, and such representation is regarded as an important fact in maintaining a South Australian presence and awareness of national and overseas practices and trends.

J.G. Griffith, Director-General of Marine and Harbors

Receipts and payment

for the year ended 30 June 1982

	1981 $'000	1982 $'000
Receipts–		
From commercial ports operatipns by way of charges on ships and cargo, bulk handling and other facilities and for other services in port and marine functions amounted to	25,095	22,618
Wharfage	11,945	10,821
Tonnage Rates	2,848	2,571
Conservancy Dues	1,149	1,053
Pilotage Fees and Other Services	4,207	3,513
Bulk Handling Charges	4,759	4,509
Fishing Industry Charges	187	151
Payments–		
For management, administrative, operating and maintenance costs and other payments incurred in the discharge of the Department's port, marine and other obligations amounted to	16,938	15,630
Management–		
Salaries, wages and related payments	5,413	4,878
Office, travelling and sundry expenses	954	921
Operating and Maintenance–		
Harbor Services	3,788	3,323
Harbor Works	3,835	4,010
Bulk Handling Installations	2,424	2,020
Fishing Industry–		
Operating and maintenance expenses	524	478
Excess of receipts over payment	8,157	6,988
Interest on Capital Funds, Sinking Fund Contribution and Superannuation Contribution	11,806	10,352
Balance being Recurrent cost of Marine and Harbors Department met from Consolidated Account	3,649	3,369
	($'000)	($'000)

Capital account

as at 30 June 1982

Details	Harbor Facilities and Services	Fishing Havens	Recreational Boating Facilities
	$'000	$'000	$'000
1981-82			
Expenditure	9,893	431	59
Payments	693	–	–
National Debt Sinking Fund	1,410	–	–
Written off from –			
Capital Works Grants	–	431	59
Special allocation of Cancelled Securities	1,874	–	–
Funds Employed as at 30 June 1982			
Gross Capital Account	133,339	7,373	102
Less National Debt Sinking Fund	21,323	179	–
	112,016	7,194	102
Less–written off from Reserves and Capital Works Grants or	–	7,194	102
– Special allocation of Cancelled Securities	3,755	–	–
Net Capital Account	108,261	–	–

Port of Melbourne

(Extracts from Annual Report 1981-82, Port of Melbourne Authority)

Chairman's review (extract)

Year's results

Considering the world economic climate and the effects of the recent industrial differences the results for the twelve months under review were satisfactory.

Total throughput of cargo exceeded 19 million tonnes, an increase of 3.8% over the previous year. Revenue was a record $55.8 million and expenditure on capital works was a record $56.2 million, including $34 million for the World Trade Centre project.

For the third successive year container traffic passed the half million mark with 525,221 twenty foot equivalent units being handled, representing an increase of 18,179 units on the previous year.

Trade Growth

The decline in economic activity within the hinterland serviced by the Port of Melbourne and that experienced by major trading partners is reflected in the relatively low trade growth. While container traffic, overseas imports and exports showed increases on the previous year, both coastal imports and exports were down.

Operating costs

Owing to inflationary pressures, particularly wages and salaries, the cost of materials, fuel and high rates of interest payments on loans taken up to finance Port works, the Authority had no alternative but to obtain Government approval for increases in Port charges during the year. The Authority, conscious of the need to remain competitive, regularly monitors its expenditure to contain costs.

However, if it is to continue to provide a satisfactory service to Port users and the community at large, overhead costs which are beyond its control have to be recovered. Again salaries, wages, interest payments and Government charges are expected to increase in the next financial year and it is inevitable that Port charges will be increased in the near future.

New facilities

The provision of new Port facilities and the upgrading of some existing installations to meet the requirements of changing ship types and trade patterns proceeded through the year. Construction of three new container cranes proceeded in the year under review and when these come into service early in the new financial year the Authority will own six container cranes.

World Trade Centre

After slightly more than three years of construction I am pleased to report that the first stage of the World Trade Centre, consisting of five interlinked buildings and the Galleria exhibition area, will be fully operational early in 1983. The response of the trading community, both private and government, to the World Trade Centre has been most encouraging with 50 percent of available leasing space committed at this early stage. The project will not only be beneficial to Australia's trading community through its world-wide links with the World Trade Centers Association, but will also bring cost saving benefits by drawing Melbourne's widely scattered trading sectors into one centralised location. An additional benefit to the City of Melbourne will be the influence the Centre will have in reviving real estate development in the area in its immediate vicinity.

The Port Authority Head Office became the first tenant in the Centre when all departments previously located in the Market Street premises moved to the World Trade Centre on 21st June 1982.

Estimated total cost of the Centre is $92 million. Construction is eight months behind schedule, which, when compared to time and cost escalations experienced on other major construction projects in Melbourne over the past few years, is not unsatisfactory.

A. S. Mayne
Chairman

Balance sheet

as at 30th June 1982

	1982 $000's	1981 $000's
Funds Employed		
Long term borrowings	167,016	120,247
Deferred contract payments	5,790	1,270
Reserves	164,845	128,234
Sinking fund	2,026	3,521
Accumulated net revenue account	43,459	37,908
	$383,136	$291,180
Represented by		
Current Assets		
Cash on hand and at bank	174	53
Investments	16,943	6,532
Debtors	5,693	4,291
Stock	4,061	3,394
Non-Current Assets		
Fixed assets	280,765	311,439
Work in progress	111,660	–
Advances for housing	571	553
Total Assets	419,867	326,262
Less Current Liabilities & Provisions		
Bank overdraft	1,149	2,791
Sundry creditors & accrued liabilities	12,064	11,710
Superannuation fund	5,759	4,865
Provisions –		
Insurance	7,815	6,979
Long service leave	4,633	4,122
Service grant gratuities	784	678
Superannuation	4,527	3,937
	36,731	35,082
	$383,136	$291,180

Revenue statement

for the year ended 30th June 1982

	1982 $000's	1981 $000's
Operating Revenue		

(Continued on next page)

Port of Townsville

(Extracts from Townsville Harbour Board Report: 1979-1982 Triennium)

Chairman's review (extract)

The three year triennium 1979-1982 has been a particularly significant period for the Port of Townsville with new developments and the completion of earlier projects previously initiated by the Board as long-term plans.

Overall activity of trade through the Port has been satisfactory with 1981-1982 showing a 6% increase to 2,231,146 tonnes over 1980-1981 although the general economy is reflected in a total tonnage downturn for the Triennium of 12% compared with the three year period 1976-1979.

However, with new cargoes developing in North Queensland and ships demanding facilities for quick turn around, the Board has proceeded to plan for the needs of the future.

With the completion of reconstruction of Berths Nos. 2 and 3, it is noted that these berths are in more demand as the size of ships using the Port is increasing. The advantage to have reinforced concrete decking on steel piles for a length of 512 metres, completely serviced by a 55 tonne container crane which is mobile for the length of the combined berths, in addition to two electric cranes of 12 and 20 tonne capacity, gives for quick handling of cargoes of all kinds.

As a result, the major shipping conferences have at last recognised the advantages of loading and discharging containerised traffic at Townsville as against the previously favoured system of centralising containers at Brisbane and Sydney.

To further augment facilities for the growing container traffic, an area of 9.1 hectares has been reclaimed immediately adjacent to Nos. 3 and 4 berths and this land is already operational with 1844 hectares occupied by the Australian Molasses Pool, 1.6 hectares occupied by Gas Supply Franchises, 306 hectares by Consolidated Fertilisers Ltd. and 4.232 hectares taken up as a container terminal operated by Northern Shipping & Stevedoring Pty. Ltd. The area given to containers provides for the storage of 128 empty containers, 128 dry containers and 96 points for refrigerated containers.

Molasses and Bulk sugar exports showed an increase of 2.87% in comparison with shipments for the previous Triennium. To service this growth trend, the Queensland Bulk Sugar Terminals Organisation have now completed the major works of redesign and construction of a new rail balloon terminal loop and associated works in the Port area at a cost of $17.6 million, whilst a further $7 million is being spent on the acquisition of new bottom dump rail waggons.

Townsville is the first port in Australia to adopt this new and highly efficient system of transporting sugar from the mills to the sugar storage at the Port.

With growth potential for the shipment and handling of mineral concentrates, a new terminal concentrates storage shed for Mount Isa Mines Limited is now nearing completion at a cost of $12 million. To allow this construction to proceed and to complete an efficient loop for the sugar rail receival system it was necessary to relocate the molasses terminal to a position on the newly reclaimed area adjacent to No. 4 Berth. This work was completed within six months and involved an expenditure of $1,603,000.

The pattern of trade through the Port is showing an upward trend and there is evidence of a pervading new confidence, with meat and phosphate once again being shipped through the Port. Initial shipments of phosphate rock are only at the rate of 250,000 tonnes per annum but facilities for transportation and stock-pile could handle shipments at the rate of 1,000,000 tonnes per annum without difficulty.

The new Mount Isa mineral concentrates storage in the Port area, has heralded an announcement by the Company of increase in their volume of export.

Despite long and earnest efforts in conjunction with private enterprise to encourage wool dumping in Townsville and direct shipment of wool for Japan and European destinations, the practise of centralising wool shipments at southern ports still continues despite an overall additional cost to the grower. It would now seem inevitable that Australia's wool shipments will in the future be centralised at Sydney, Melbourne and Fremantle and the prospect of wool dumping and handling from Townsville will be unlikely.

New Ventures:

The Board has adopted a conservative approach to borrowings whilst interest rates remain high, but several lease-back arrangements have been made during the period which have alleviated the necessity to borrow heavily whilst at the same time retaining a high rate of development.

Reserves are being accumulated which by 1985-1986 shall result in a marked fall in the ratio of outside loan indebtedness to development expenditures.

(Continued from page 24)

Charges on ships	8,581	6,677
Charges on goods	34,618	27,851
Charges for port services	3,819	3,332
Rent and license fees	6,275	5,775
Interest received	2,353	1,645
Other revenue	105	102
	55,751	45,382
Operating Expenses	50,839	43,508
Contribution to consolidated fund	1,304	836
	51,873	44,344
Surplus before abnormal and Non-operating items	3,878	1,038
Abnormal items	–	2,732
Operating surplus (Deficit)	3,878	(1,694)
Non-operating revenue – Interest and discount on sinking fund investments	386	341
Non-operating expenses – Loss on disposal assets	208	258
	178	83
Surplus (Deficit) for year transferred to accumulated net revenue account	$4,056	($1,611)

An important feature of development at the Port of Townsville has been the continuation of the policy of entering into financial arrangements with private enterprise for the construction of major facilities. Where private enterprise and the Board can see common objectives of mutual advantage, there develops a strong association of on-going consultation and direction of effort which is ultimately in the interest of all Port users.

A. G. Field
Chairman

Balance sheet

as at 30th June 1982

	1982 $000's	1981 $000's
Accumulated funds	14,282	13,241
Reserves		
Long service leave sinking fund	160	120
Assets replacement fund	–	–
Special loan redemption fund	397	509
Maintenance reserve fund	29	–
	586	629
	$14,868	$13,870
Represented by		
Current assets & investments		
Cash at bank and on hand	1,818	176
Term deposits, S.T.M.M., commercial bills	2,869	1,938
Stores	51	53
Debtors	421	420
Prepayments	–	–
	5,161	2,588
Deduct current liabilities		
Sundry creditors	3,052	680
Contract & sundry deposits	8	29
	3,061	710
Working capital	2,100	1,878
Fixed assets		
Wharves	10,280	–
Less redemption reserve	203	–
	10,077	10,325
Lands & tenanted buildings	12,763	–
Less redemption reserve & advances	8,569	–
	4,193	4,274
Small boat harbour & facilities	242	251
Major plant – cranes	1,627	–
Less redemption reserve	1,161	–
	465	636
Dredging plant	266	318
Workshops	73	57
Miscellaneous plant	124	72
Electrical distribution	72	79
Wharf supervision	49	34
Store facilities	3	–
Administration	569	167
Engineering	17	14
Fire services	–	6
Access roads	19	22
Channels & swing basisn	5,997	5,997
Parks, gardens, cleaning	14	19
Work-in-progress	24,351	–
Less advances	16,333	–
	8,018	5,400
	30,204	27,676
Intangible assets		
Relocate molasses terminal	1,543	–
Bed materials survey	–	16
Stability analysis (Wharves)	–	8
	1,543	24
	31,747	27,701
Deduct long term liabilities		
Special advances	2,731	–
Less redemption	1,365	–
	1,365	1,530
Advance on rental	4,878	1,653
Loans		
General	12,735	12,525
	18,979	15,709
	12,768	11,992
Accumulated funds	$14,868	$13,870

Receipts and disbursements statement

for the year ended 30th June 1982

	1982 $000's	1981 $000's
Harbour fund		
Balance 1st July	1,300	37
Receipts		
Harbour dues	3,434	3,096
Tonnage rates	862	770
Channel development charge	65	64
Rents	244	242
Rental in advance	3,192	1,800
Plant hire	35	66
Water & electricity charge	98	95
Interest on investments	161	203
Other operating receipts	200	94
Capital receipts	52	743
	8,348	7,178
Sub-total	9,649	7,216
Payments		
Administration	520	503
Dredging	886	684
Wharves maintenance	180	158
Lands & tenancies	87	66
Plant hire	75	74
Wharf supervision	119	104
Water & electrical services	199	163
Interest	1,146	1,057
Other operating costs	907	761
Loan commitments	821	834
Capital expenditure	1,183	1,506
	6,128	5,915
Balance 30th June	$3,521	$1,300

International maritime information: World port news:

8th International Harbour Congress

Antwerp, 13-17 June 1983

Organized by:
Koninklijke Vlaamse Ingenieursvereniging (K. VIV)
Technologisch Instituut (Section Harbour Techniques)

co-sponsored by P.I.A.N.C. (Permanent International Association of Navigation Congresses)

Venue:
- 8th International Harbour Congress
  Stadsschouwburg (Municipal Theatre)
  Theaterplein 1
  2000-Antwerpen (Belgium)
- 5th International Harbour Exhibition
  Stadsfeestzaal (Municipal Festive Hall)
  Meir 78
  2000-Antwerpen (Belgium)

Conference Office:
K. VIV-8th I.H.C.
Jan van Rijswijcklaan 58
B-2018-Antwerpen (Belgium)
Tel. national: 03/216 09 96
international: 00-32-3-216 09 96

Congress Time Table

Date	Morning	Afternoon	Evening
Sunday 12 June		Advance registration	Informal meeting
Monday 13 June	Advance registration Opening ceremony of the congress Opening of the 5th Harbour Exhibition	Session 1 Industrial visits	
Tuesday 14 June	Session 2	Panel Discussion 1 Industrial visits	Flemish Cultural Evening
Wednesday 15 June	Session 3	Boat trip to the port of Antwerp	–
Thursday 16 June	Session 4 Visit Berendrecht lock	Panel discussion 2 Closing session	Breughel evening
Friday 17 June	POST - CONGRESS TOUR		
Saturday 18 June	Guided visits to museums	Guided visits to museums	
Sunday 19 June		Closing of the 5th International Harbour Exhibition	

Session 1

Geology and soil mechanics related to harbour engineering
General reporter: W. BOKHOVEN, director Laboratorium voor Grondmechanika Delft, The Netherlands

Session 2

Port planning
General reporter: J.-F. MAQUET, directeur général Sofremer, Paris, France

Session 3

Civil engineering and hydraulic engineering in offshore, coastal and non-coastal harbours
General reporter: J. CLIFFORD, Sir William Halcrow & Partners, Swindon. Great Britain

Session 4

Electromechanical and electronical harbour equipment and harbour appliances
General reporter: J. DE RIES, Direkteur-generaal Bestuur voor Elektriciteit en Elektromechanika, Ministerie van Openbare Werken, Brussels, Belgium

Panel Discussion 1

Current port development issues in the third world
Chairman: E. LOEWY, Sir William Halcrow & Partners, Swindon, Great Britain

Panel Discussion 2

Safety in harbours
Chairman: Per H. OLSON, Port of Goteborg Authority, Sweden

"Port Finance" course: IPER/ENPC/UNCTAD

The Port Study Centre of Le Havre (IPER) and l'Ecole Nationale des Ponts et Chaussées (ENPC) will organize jointly with UNCTAD a two-week course from 30th May to 10th June 1983 devoted to the study of Port finances.

The programme will take place in Le Havre and is aimed at all executives who have financial responsibilities either in ports or administratives or private handling companies.

The working language will be French.

All information can be obtained from:
IPER
1, rue Emie-Zola
76090 LE HAVRE CEDEX
FRANCE
Tel. (35) 42 09 23
Telex: CHAMCOM 190091 F

Programme

Cours: **LES FINANCES PORTUAIRES**

Outils de gestion, investissements et tarification
Le Havre, du Lundi 30 Mai au Vendredi 10 Juin 1983

PUBLIC

Ce cours s'adresse aux responsables financiers et aux économistes des autorités de tutelle, des autorités portuaires, des organismes gestionnaires d'installations portuaires ou des sociétés de manutention tant du secteur public que privé, chargés de définir et d'appliquer une politique dans le domaine du contrôle budgétaire, des investissements et de la tarification.

CONDITIONS DE PARTICIPATION: 8.000 F.

A régler à l'ordre de la Chambre de Commerce et d'Industrie du Havre par chèque bancaire ou par virement: Crédit Industriel de Normandie–compte n° 041 19 70 00 9 W.

Comprenant les frais pédagogiques ainsi que les repas de midi (lundi au vendredi).

Date limite d'inscription: 30 Avril 1983

Les bulletins d'inscription doivent être adressés à:

Institut Portuaire d'Enseignement et de Recherche 1, rue Émile Zola–76090 Le Havre Cedex Tél. (35) 42.09.23–Télex Chamco 190091 F

RESPONSABLE PÉDAGOGIQUE:

M.J.G. BAUDELAIRE
Ingénieur Général des Ponts et Chaussées

CONFÉRENCIERS:

M.G. DE MONIE–Économiste, Expert portuaire

M.J. GROSDIDIER DE MATONS–Chef de Division des Chemins de fer et des Ports. Région Europe, Moyen Orient et Afrique du Nord. Banque Mondiale.

M.C.M. HUNTER–Économiste, Division des Transports Maritimes COUCED.

M.G. WILLEMS–Expert financier au Port Autonome du Havre.

MÉTHODES PÉDAGOGIQUES

Conférences, tables rondes, études de cas.

1 ère semaine

LUNDI 30 MAI

10 h. Accueil des participants
Ouverture officielle
Présentation du stage

Service public, rentabilité
économique et rentabilité financière

MARDI 31 MAI

Les aspects réglementaires et financiers des différents systèmes d'organisation des activités portuaires.

Les objectifs économiques et financiers des entités portuaires.

La politique de la Banque Mondiale

MERCREDI 1er JUIN

Outils de gestion: terminologie financière et comptable.

L'investissement: techniques d'études de rentabilité.

JEUDI 2 JUIN

Études de cas:–applications comptables et financières–applications économique.

Outils de gestion: comptabilité analytique portuaire.

VENDREDI 3 JUIN

Comptabilité analytique portuaire (suite)

Rentabilité des investissements: cas d'application.

2 ème semaine

LUNDI 6 JUIN

Rentabilité des investissements. Correction du cas d'application et complément théorique et pratique.

Prévisions de trafic portuaire.

MARDI 7 JUIN

Outils de gestion: prévisions budgétaires à court et moyen terme. Contrôle budgétaire Tableau de bord

Le cas ‹‹Port Mana››

MERCREDI 8 JUIN

La tarification portuaire.

Cas ‹‹Port Mana›› (suite)

JEUDI 9 JUIN

Tarification portuaire:
– Application au magasinage et à l'entreposage.
– Application aux terminaux à conteneurs.

Incidences de l'entretien et du renouvellement des matériels portuaires sur la tarification.

VENDREDI 10 JUIN

Table ronde

Évaluation et clôture du séminaire.

Panama Canal toll

President Reagan has approved the 9.8 percent toll hike requested by the Panama Canal Commission, (see Advisory, February 7, 1983). The President's decision came on 9th February. At the same time, he also approved the Commission's plan to install, on a permanent basis, a vessel booking system. Tested last year on an experimental basis, the system is voluntary. The way it works is that for a fee of 23 cents (U.S.) per registered ton, canal users can take advantage of a limited number of reserved transit spaces.

Faced with mounting revenue losses as a result of North Slope oil diversions to the trans-Panama pipeline, the Panama Canal Commission had been urging the President to approve a 9.8 percent toll increase to take effect "as soon as practical after March 1, 1983." The Commission had proposed the rate hike last April, but after public comment and a hearing in June, decided to defer the increase until it could get more definite information on the impact of the pipeline and other information relating to costs and revenues. In the meantime, concerted efforts were undertaken to minimize costs and enhance productivity. Those efforts, though continuing and successful to a point, were not sufficient, the Commission decided at a meeting on January 26, 1983, to offset the loss of oil revenues. The Commis-

sion contends that the increases are necessary if the Canal is to remain self-sufficient. The rates are applied as follows:

(a) Merchant vessels, yachts, army and navy transports, colliers, hospital ships and supply ships, when carrying passengers or cargo, $1.83 per net vessel ton of 100 cubic feet each.
(b) Vessels in ballast, without passengers or cargo, $1.46 per net vessel ton.
(c) Other floating craft, including warships, $1.02 per displacement ton.

Port of Montreal retains relative market share

Total cargo tonnage at the Port of Montreal during 1982 reached 20.3 million metric tonnes for a decline of 18% compared to the record volume of 24.8 million tonnes handled in 1981.

In making this announcement, Port of Montreal General Manager, Mr. N. Beshwaty stated that this decline is attributable to the world economic recession and that the overall performance remains, however, satisfactory since the port has succeeded in retaining its relative share of the market.

In his comments on the evolution of Port activity during the last twelve months, the General Manager indicated that it was the category of solid and liquid bulk products such as mineral ore, coke, coal and petroleum products which has contributed more extensively to the fall in total traffic particularly because of a severe stagnation in the production and consumption of steel both in Canada and abroad as well as a depressed market for gazoline and fuel oil.

Grain traffic at 6.2 million metric tonnes remained at the same level as in 1981.

During 1982, general cargo traffic, the most lucrative in the Port's economy reached 4.4 million tonnes compared to the historical record of 5.1 million metric tons registered in 1981. While lower by 14%, this volume is higher than the average of 4.1 million tonnes in the last five year period.

Containerized traffic reached 3.2 million metric tonnes for a decrease of 7.6% compared with the previous year, and the number of containers handled totalled 316,000 or 14,000 units less than the record volume of 330,000 units in 1981.

With its volume of containerized traffic, the Port of Montreal accounts for 56% of the market for the ports of Eastern Canada and now ranks alone in third place amongst the North American ports of the Eastern Seaboard, after New York and Baltimore.

Mr. Beshwaty also revealed that the Port of Montreal earned a net profit of $16.3 million in 1982 and expressed the opinion that unless there is a sudden recovery in the economy, results of port activity for the current term should not exceed those of last year.

Port enters New Year on note of optimism: Nanaimo Harbour

The Port of Nanaimo enters the New Year with confidence. There is a feeling of optimism which stems from present conditions plus signs of general economic recovery.

The year just past brought problems that gave considerable concern from time to time. Yet, on balance and despite a generally depressed economy, export shipping over Nanaimo Harbour Commission wharves, has ended the year with far better results than could have reasonably been expected earlier.

By no means was it a record-breaking year but on the other hand it was not, according to year-end figures, a bad year.

N.H.C. Marketing Manager R.D. Chase says "Lumber shipments from Nanaimo during 1982 turned out better than had been anticipated in view of the current slump in the forest products market. Pulp shipments have suffered from a very depressed market. However lumber is continuing to hold up well", he explained.

Adding to the woes of the market place last year, were waterfront labour problems which included a long period of work slowdown plus a complete shutdown. As a consequence export tonnage was adversely affected.

Being a major forest products port and sensitive to the industry's changing trends and conditions, Nanaimo shipping could have suffered badly. Fortunately the fairly steady production of Vancouver Island lumber mills, taking advantage of this port's efficiency and facilities and having overseas orders on a continuing basis, resulted in satisfactory year-end figures according to Chase.

As for 1983, he believes that there is no cause for gloom there either.

"We feel that there is genuine reason for optimism," he says.

A similiar attitude is noted in a statement by MacMillan Bloedel's chief executive officer Cal Knudsen reported in the MB Journal.

"Prospects for recovery are now materially better than any time since 1979," he says. This in spite of the company's record third quarter loss of $30 million last year.

While economists are making various predictions as to "bottoming out" of the depression, the Port of Nanaimo is looking forward to increased activity of export shipping and general business improvement. Optimism is the keynote as the port enters its 23rd year under the administration of Nanaimo Harbour Commission.

Engineering Department provides reliable port services: Port of Quebec

The largest of six services directed by General Manager Henri Allard at the Port of Quebec, the Engineering department ensures that facilities are efficiently designed, built and maintained to stay in stride with rapidly evolving port technology.

Port Engineer Jean Lépine, who heads a team of forty employees specialized in fields ranging from electrical maintenance, service to clients and distribution to the design of port facilities, likens a port to a small city which depends upon a host of services: proper lighting, reliable electricity and water supply and well-maintained roads, railways, buildings and wharves. The Engineering department is responsible for providing those essential services and coordinating the improvement of port facilities with the private enterprise which handles the stevedoring operations.

The Engineering department is a valuable resource for port clients, evaluating the capacity of existing installations, providing counsel for future development and expansion projects and monitoring the construction of everything

from railways to sheds and wharves to ensure that safety and efficiency standards are respected.

Two recent projects to maximize the productivity of port facilities underline the Engineering department's role. This fall the Port of Quebec completed new road and rail access to the facilities located at the Old Port sector, including the grain elevators operated by Bunge of Canada Ltd., to increase unit train handling capacity. Space was also added for stockpiling general cargo at the Anse au Foulon sector. In both projects, the Engineering department coordinated design and construction and the new facilities came on line as scheduled.

The Port of Quebec's efficient Engineering department provides dependable services that ensure competitive cargo-handling facilities.

Coal exports in US ports

The U.S. exported 105.2 million tons of coal in 1982, down somewhat from the 1981 record of 110.2 million tons, but significantly more than in any previous year. The 1982 total includes overseas exports of 87 million tons (compared to 92.4 million in 1981 and 72.8 million in 1980), and shipments to Canada amounting to 18.2 million tons (versus 17.9 million tons the previous year and 17 million tons in 1980).

U.S. PORTS: COAL EXPORTS

	1982	1981	1980
Hampton Roads	53,049,035	47,449,001	48,203,054
Baltimore	10,680,833	12,683,731	12,386,259
Philadelphia	2,198,400	2,283,800	3,659,500
Camden	185,000	417,800	16,100
Morehead City	305,763	871,580	–
Savannah	362,443	681,184	–
Mobile	9,191,000	6,417,849	5,317,681
Lower Mississippi	7,372,940	13,981,000	3,877,000
Los Angeles/Long Beach	3,045,000	5,261,000	1,038,000
Stockton	182,639	16,185	–

(AAPA ADVISORY)

EPA extends ocean dump sites designation

The Environmental Protection Agency (EPA) has extended the interim designation of some dredged material dumping sites to allow it more time to complete Environmental Impact Statements and formal rulemaking procedures designating permanent sites. EPA says it is taking the action to assure that maintenance dredging of harbors and essential disposal of dredged materials may continue at the interim sites for the time being. The affected sites and schedules are shown below:

(1) Until a formal rulemaking is completed or January 31, 1984, whichever comes sooner:
- (a) San Francisco Channel Bar, CA
- (b) New York Mud Dump, NY
- (c) Jacksonville, FL
- (d) Galveston, TX

(2) Until a formal rulemaking is completed or July 31, 1984, whichever comes sooner:
- (a) Portland, ME
- (b) San Juan, PR
- (c) Charleston, SC; Savannah, GA; Wilmington, NC (3 sites)
- (d) Sabine-Neches, TX
- (e) Mouth of Columbia River, OR (5 sites)

(3) Until a formal rulemaking is completed or January 31, 1985, whichever comes sooner:
- (a) Morehead City, NC
- (b) Georgetown, SC
- (c) Pascagoula, MS
- (d) Humboldt Bay, CA
- (e) Long Beach, CA
- (f) San Diego, CA
- (g) New Jersey/Long Island (8 sites): Absecon Inlet, NJ; Cold Spring Inlet, NJ; Manasquan Inlet, NJ; East Rockway, NY; Jones Inlet, NY; Fire Island, NY; Shark River, NJ and Rockaway Inlet, NY.
- (h) Gulfport, MS; Mobile, AL and Pensacola, FL. (3 sites)
- (i) Coos Bay, OR

(AAPAADVISORY)

Alabama State Docks sets cargo, earnings records in FY 1982

For more than a decade now, the Alabama State Docks has been the scene of a massive modernization and expansion program, involving virtually every facility and operation at the sprawling port complex.

This effort paid off handsomely during Fiscal Year 1982 which ended September 30th, as cargo movement and earnings soared to all-time highs at the state-owned port facility.

Total movement at the State Docks for the fiscal year amounted to 29,419,178 tons–a whopping 26 per cent increase over tonnage handled during the previous year.

This tonnage generated record-smashing operating revenues of $52.8 million from which net earnings of $16.4 million were gained after allowance for depreciation and interest payment.

This record-breaking performance is particularly gratifying since it was attained in the face of a worldwide recession and declining international shipping activity. The vast years of experience of key management personnel at the Alabama State Docks contributed immensely to the new records.

Total port tonnage for the 12 months, beginning October 1, 1981 and ending September 30, 1982, was 42,255,312, eclipsing the previous record of 41.6 million tons handled in 1980.

Alabama State Docks Director Robert M. Hope pointed out that most of the increases were attained during the first half of the fiscal year as worsening economic conditions both here and abroad were felt at the State Docks during the latter part of the year.

Due to the favorable level of activity at the State Docks during much of the fiscal year, employment remained relatively stable with an average of about 775 persons on the payroll which amounted to $17,964,540.91. This has a $54 million impact on the state's economy, according to economic experts.

The largest increases in tonnage were chalked up at the McDuffie Terminals bulk coal export plant. At this facility where a third major expansion program is nearing completion, a total of 16,038,092 tons of coal was handled. This figure includes coal unloaded from various transportation

sources and moved either directly to waiting vessels or placed into storage. The total amount of coal exported rose from 5,629,230 net tons to 9,254,625 net tons.

Tonnage gains in general cargo were also registered in the Wharves and Warehouses area where movement increased from 1,572,537 tons in 1981 to 1,594,497 tons in the fiscal year just ended. Part of this tonnage increase can be attributed to the containerport facility where the total number of units handled increased from 20,370 to 29,309.

Also registering a gain for the year was the Public Grain Elevator. A total of 4,386,369 tons of grain was handled during the year, compared with 3,743,072 tons the previous year. The Public Grain Elevator activity was the third highest in history. Soybeans was the major commodity handled, followed by red wheat which is locally produced.

Major construction programs continued during the year at virtually every State Docks facility.

The Phase III expansion of the McDuffie Terminals which will increase annual export capacity to over 20 million tons moved along toward a completion date in April, 1983. *(Port of Mobile)*

CE Maguire completes master plan for general cargo ports of Hampton Roads

CE Maguire, the international architectural, engineering and planning firm, (an Associate Member of IAPH), recently announced completion of a major port facility master plan to upgrade general cargo shipping capacity of Hampton Roads, Virginia. The plan will balance marine terminal capacity and will improve Hampton Roads' competitiveness with other coastal states ports. It was commissioned by the Virginia Ports Authority.

"This project recognizes CE Maguire's capabilities as a total engineering services company. The Hampton Roads expansion reflects the growing national recognition of the need to maintain, and in some cases, substantially improve the nation's infrastructure, including ports, highways, bridges, roads, airports and waste facilities," said John L. Slocum, president, CE Maguire.

Maguire's Virginia Ports Authority report projects future capital and engineering requirements to accommodate an expected doubling of general cargo shipping within the next 20 years for the five Hampton Roads ports of Norfolk, Newport News, Lambert's Point, Sewell's Point and Portsmouth. The five ports, scheduled to be integrated under jurisdiction of the Virginia Ports Authority within the next five years, are a major Mid-Atlantic center for container, breakbulk, roll-on/roll-off and project cargo trade.

Recession, drilling lag cited in Port of Houston tonnage drop

The national and world-wide recessions, together with an international slow-down in exploration for and production of fossil fuels, caused a reduction in cargo shipments through the Port of Houston during 1982.

Total tonnage fell from 98,902,014 in 1981 to 77,346,275 in 1982, a decline of 22 per cent, according to preliminary statistics released by the Port of Houston Authority.

Although general cargo was down last year compared to 1981 and 1980, the 9,636,702 tons shipped through port facilities in 1982 was the third highest since the Port of Houston opened in 1914. The Authority's revenue tonnage, most of which is general cargo, was down 18 percent compared to the port's overall 22 percent decrease.

The slow-down in energy exploration and production accounted for decreases in some general cargo items. Among these items are drilling and gathering pipe and oil field tools.

Pipe was the port's largest category of steel imports in 1981 when steel overall was the leading import (by value) to Houston.

Imports of steel products in other forms, such as plates and sheets used in the fabrication of drilling rigs, probably also will show declines when individual commodity figures for 1982 are available. Although total steel shipments fell from 1981's all-time record of 5,896,412 tons to 3,765,771 tons, last year's tally will probably keep the Port of Houston the nation's leading steel handler.

Of the 9.6 million tons in general cargo, 8.4 million tons were handled at Port Authority facilities. The handling of automobiles, steel, containers and other general cargoes generates most of the Port Authority's operating revenues. General cargo makes a greater impact per ton on the economy than bulk cargo.

The largest tonnage decrease was the shipment of bulk cargoes, off 17.7 million tons from 85,484,357 tons in 1981 to 67,709,573 tons last year. This decline included a 12½-million-ton drop in coastwise shipments of bulk liquid cargoes and a 5.2-million-ton decrease in grain exports. Most bulk cargoes in the Port of Houston are handled at private terminals serving channel industries.

Other 1982 cargo statistics released by the Authority show automobile imports held up well with 228,742 units landed last year compared to 237,010 in 1981. Container movements in twenty-foot-equivalent units (TEU) totaled 302,699, a five percent drop from 318,661 TEU in 1981.

The number of ships calling at the port remained relatively stable as 5,471 docked in Houston last year versus 5,592 in 1981.

During the year the Port Authority took several steps to stimulate cargo flow. Some tariffs were frozen while increases in others were delayed, saving money for shippers and ship owners. The Authority has asked the federal Foreign Trade Zone Board to act promptly on the pending Houston Foreign Trade Zone application which, if approved, will stimulate waterborne commerce. The Authority has been preparing for economic recovery by constructing new facilities and modernizing existing ones.

Model Seaport plan to be used nationwide: Port of Houston

The U.S. Customs Service is expected to announce in early 1983 that a current Houston model seaport plan, which has been in existence at the Port of Houston Customs District for 13 months, will go into effect nationwide. Under this Houston Model Seaport Plan, cargo ships entering the port are able to be cleared many days ahead of arrival. This is done by the shipper's agent, be it the customs broker or whatever, filing the cargo manifest with Customs before the ships arrive. This leaves shipments liable to post audit in order to determine whether the users are complying with the terms of the agreement with Customs.

Donald Kelly, director of Customs in Houston, claims the program has passed all tests, and should be continued on a full-time basis. Kelly claims the program allows 75 per cent of cargo to be released three days prior to the arrival of the ship. Mr. Kelly claims Customs has greatly increased its cash flow, while simultaneously importers have received their cargo much quicker, allowing for reduced storage and other related costs. *(Port of Houston)*

Container, LASH, ro-ro cargoes handled quickly at Barbours Cut: Port of Houston

Improved facilities and low turnaround times.

That is what shippers and ship owners want. And that is what the Port of Houston Authority's Barbours Cut Terminal offers. The $100 million facility is the most modern intermodal terminal on the Gulf of Mexico.

Located at the head of Galveston Bay, Barbours Cut is just a short two-hour trip from the Gulf. When a container ship navigates the 40-foot-deep channel and docks at one of the three 1,000-foot wharves, getting that vessel back out to sea as quickly as possible is the No. 1 priority.

With six Paceco container cranes waiting dockside, discharging and loading begins as soon as the ship is secured. Sea-Land Service, Inc. leases one of the wharves and owns two of the cranes, but Port Authority customers can use the facilities when Sea-Land is not using them. Four of the cranes have a capacity of 40 long tons each and the capacity of each of the other two is 30 long tons. One of the 40-ton cranes is equipped with a rotating trolley.

Trucks enter and leave Barbours Cut Terminal via nine interchange lanes, one with a 60-ton scale. Road traffic is processed from 8 a.m. to 5 p.m. A road traffic coordinator helps keep the trucks moving. A trucker with the proper papers can pull into the facility, take on a container and be on his way to the consignee within an hour, under ordinary circumstances. Trucks lacking proper papers are processed separately.

Each container wharf is backed by at least 36 acres of paved marshalling area. The Port of Houston Authority owns nine straddle hoist yard cranes, 30 chassis and 32 yard hustler trucks. Stevedores can use the trucks and chassis upon request. Two heavy-duty lift trucks are available for moving full and empty containers. A 15-ton capacity lift truck with an expandable spread is on hand for lifting empties.

Containers can be stacked three high in 17 rows. The two public terminals can accommodate 11,465 TEUs and 124 reefers. There is space to store 1,500 wheeled units and more room will be available by the summer of 1983. Containers are stuffed and stripped by Port Authority employees at the 55,000-square-foot Container Freight Station. The station is just one mile away from the container docks and is easily accessible by the excellent intra-terminal road.

Keeping track of the containers, their exact location in the yard and their destinations is handled by the Container Information Control System (CONICS), a computer system. From their offices, shipping agents, via their own computer, terminal and phone line, can query their own accounts to check container numbers, destinations and status. Agents can also update their accounts through CONICS. A totally new system, the Houston Container Control System (HCCS), will be installed by 1983. HCCS will provide shippers with more data than CONICS does, such as billing information.

Barbours Cut is also a prime roll-on/roll-off cargo handling facility. A 100,000-square-foot transit shed services the Cut's hammerhead ro/ro platform. Barbours Cut Marine Contractors, Inc., located at the Terminal, handles the preparation of ro/ro cargoes.

The east side of the ro/ro platform, which is 52.5 feet wide, can handle ships up to 450 feet long while the 63-foot-wide west side can accommodate any vessel that is now, or will be, on the seas. An 82-ton mobile crane is available for lifting ro/ro and other cargoes. Heavy-duty paving covers the ro/ro marshalling area.

Barge-carrying LASH and Seabee ships are easily loaded and unloaded at a U-shaped pier. This configuration provides a runway for trucks servicing "mother" ships with self-unloading gear. Storage space for 100 LASH barges is provided on the north side of the Barbours Cut channel.

An excellent railway system allows for easy overland shipment of containers and ro/ro cargoes. COFC/TOFC cargoes are handled at the Port of Houston Authority's railroad ramp point, operated by Southern Pacific Transportation Company. Tracks also extend into the ro/ro cargo area. Since Barbours Cut is in the Houston Commercial Zone, interstate railcar and truck rates are the same as the rates in the Port of Houston Turning Basin area.

U.S. Customs agents work full-time at Barbours Cut, so there are no delays in getting Customs officers to examine cargo and get it on its way to the customer.

Fire protection is close at hand. The CAPT. FARNSWORTH, the Port of Houston Authority's newest fire boat, is berthed next to the LASH ship dock. A fire station with its truck and crew is a few feet away.

As if these modern services were not enough, the Port of Houston Authority is improving Barbours Cut even more. Construction of a fourth container wharf is under way with a projected completion date of June 1983. The wharf will be like the others, 1,000 feet long and backed by 36 acres of paved marshalling area. Two new container cranes will handle cargo at the facility.

Plans are on the drawing board to expand the Terminal Building, possibly making office space available for lease.

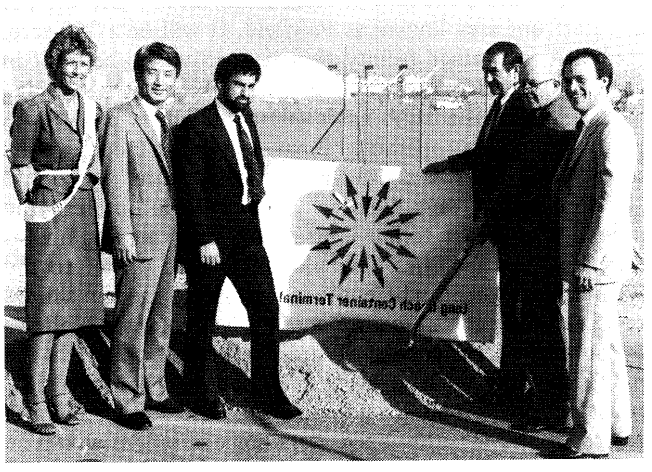
Incentive rates are available to large volume users of Barbours Cut Terminal. Rates for stuffing and stripping containers are governed by Tariff 14 and rates for handling freight to and from land carriers are in Tariff 8. Break-bulk and ro/ro cargoes are handled at standard Tariff 8 rates.

MS Silvia Sofia begins regular service to Long Beach

Transportacion Maritima Mexicana, the Mexican national flag line recently introduced its fifth containership to call regularly at the Port of Long Beach as part of liner service linking trade between Mexican, Central American, West Coast and Far Eastern ports. Before arriving in Long Beach the MS Silvia Sofia called at the ports of Salina Cruz, Manzanillo and Ensenada and upon departing Long Beach she will call at Hong Kong, Taiwan, Korea and Japan. Ceremonies marking the maiden arrival were attended by Michael Cress (left), Area Manager for Trans American

Steamship Agency, Inc.; Captain L.R. Staines (center), Master of the vessel and Donald Fleming, Director of Public Relations for the Port, who presented the captain with a commemorative photo of the gateway port.

Long Beach Container Terminal expanding



Final phase construction of the Long Beach Container Terminal was launched recently with groundbreaking for new multi-story gatehouse and headquarters office building adjacent to Berths 243-244 on Pier J. Shown at the site are, from left, Al Benki, Vice President Pacific Southwest for Seapac Pacific Services; Port Executive Director James H. McJunkin; Jack Jeffrey, Executive Vice President of LBCT; Jerry Tarpin, Vice President of Interocean Steamship Corporation and agents for Neptune Orient Lines; Captain B.C. Chon, Korea Shipping Corporation Vice President and Miss Port Of Long Beach, Ann Trotechaud. LBCT, the seventh and most recently opened container terminal in the Port of Long Beach is currently being expanded to 55 acres.

Second quarter report for fiscal year 1982/83: Port of Los Angeles

Revenue tonnage through the Port of Los Angeles between July and December 1982 showed a 2.3 million ton increase over that period last year. For the six-month period, 20.3 million tons were recorded, as compared to 18 million tons last year.

Gross operating revenue was $34.4 million for the two quarters, an increase of 3.3%. Expenses for facilities, operation and administration increased from $14.7 million to $17.4 million for the two quarters.

Over $37 million were spent by the Port in the first half of the fiscal year for capital development projects. Included were $10.2 million for Main Channel Deepening, $7.7 million for the container terminal development at Berths 216-218, $6 million for the West Channel/Cabrillo Beach Recreational Complex, and $7.8 million for the new American President Lines Terminal at Berths 121-126 and the APL Administration Building.

The net income total of $20.1 million for the two quarters represented an 8% decrease from the same six months last year.

Final design's contract for Intermodal Container Transfer Facility approved: Port of Los Angeles

The Los Angeles Board of Harbor Commissioners recently approved a joint agreement with the Port of Long Beach and the Southern Pacific Transportation Company for Southern Pacific (SP) to perform final design and construction management services for the Intermodal Container Transfer Facility (ICTF). The ICTF has been proposed as a joint project between the ports and the railroad on a 137-acre parcel of Port of Los Angeles property.

This contract, which totals just over $4 million, calls for SP's Design and Construction Group to complete the final design and specifications, obtain all necessary permits for the construction, coordinate utility services and relocations, and provide construction management services during the construction phase. As the eventual operator of the ICTF, the SP is thoroughly familiar with its operational and maintenance requirements.

As proposed, the SP will complete design and construction documents in phases to allow an early start to construction, with the first of four or five construction contracts to be ready for bid in mid-1983. Approximately 21 months will be required to complete the entire project, making the facility operational in the spring of 1985.

Initial construction costs for the ICTF are estimated at just under $40.1 million.

Baltimore celebrates Dundalk completion

The Maryland Port Administration, in conjunction with private port interests, celebrated the completion of facility expansion and construction at the Dundalk Marine Terminal recently when it opened the terminal to the public and dedicated the new Berth 13.

The "Great Berth Day" events included guided bus tours

of the 550-acre terminal, the largest general cargo handling facility in the port of Baltimore. Ongoing exhibits and demonstrations of customs inspection, emergency helicopter rescue and cargo handling were held in and around the Passenger Services Building. The U.S. Coast Guard Cutter *Apalachee* docked throughout the celebration for public boarding.

Lowell K. Bridwell, Maryland State Transportation Secretary, and W. Gregory Halpin, Maryland Port Administrator, led Berth 13 dedication ceremonies. The container cargo berth, a $32 million facility, is expected to add 750,000 tons annually to the port's cargo capacity.

Berth 13, a 1,050-foot-long bulkhead, is supported by 30 acres of container storage space. Its bulkhead is designed to permit the excavation of a wharfside channel to a depth of 42 feet. The new berth will increase Dundalk's yearly throughput of container cargo to about 3.5 million tons.

Completion of Berth 13 and erection of its container cranes bring to 14 the total number of cranes at Dundalk Marine Terminal. The terminal, formerly the Harbor Field Airport, was purchased by the then Maryland Port Authority in 1959 at a cost of $4 million. Since 1962 more than 21,300 merchant ships have called the terminal with import and export cargoes totalling nearly 42 million net tons.

The terminal has handled 3.3 million import automobiles and almost 26 million net tons of container cargo in that period. More than $200 million has been spent in capital improvements and construction at Dundalk during the past 23 years.

The terminal now has 521,000 square feet of covered storage plus two 65,000 square foot and one 62,500 square foot consolidation sheds. It connects with Chessie System, Canton Railroad and Conrail. Road access to highways is via Broening Highway to Interstate-695 and the Francis Scott Key Memorial Bridge.

How important is Dundalk Marine Terminal to the economy of the port, the city of Baltimore, and the state of Maryland?

"There is no other facility in Baltimore's port history that has meant more to its progress than Dundalk," Halpin says. "Baltimore was fortunate to have the Dundalk site when containerization began. Dundalk was conducive to containerization. It could harbor marginal berths. In fact, these berths were already there, at least in part. All we had to do was dredging a little and increase the landfill by roughly 200 acres. In short, it was a matter of having the right place at the right time.

"Dundalk's location is excellent for container traffic. It is close to the main highways, thus allowing ample truck traffic, close to the rail connections of Conrail and the Chessie System, close to downtown Baltimore, close to the main ocean channel. It was laid out in such a fashion that it could be relatively quickly converted to what we had to have: a large container facility," Halpin says.

The completion of the last phase of Dundalk's construction will match the capacity at the terminal deemed necessary by the MPA for the port to meet its cargo projections.

These projections run through the next two decades. They indicate a continuing growth of the entire port which generates now about $1.5 billion in yearly revenues, some $100 million in tax money for the state, and direct and indirect employment for about 100,000 people, the MPA says.

In addition to Dundalk Marine Terminal, the MPA's other public facilities are: Clinton Street Marine Terminal, North and South Locust Point Marine Terminals, and Howkins Point Terminal.

The public piers of the MPA don't handle bulk cargo. They are only concerned with general and container freight. And these, according to projections and forecasts, will double in volume by the year 2000.

"We have to prepare therefore for a doubling of our capacity over the next fifteen years–to 10 million tons," says Halpin.

Indeed, such preparations are already in progress.

The next terminal complex to be developed is Sea Girt, which is literally a stone's throw away from Dundulk, across a narrow strip of harbor.

That area, part of which is now being used by Sea-Land, has been filled with material from the excavation of what will soon be the world's widest vehicular tunnel ever built by the trench tube section method–the 1.7-mile north-south connection of Interstate-95 through Baltimore, between historic Fort McHenry and the Canton industrial area. The Sea-Girt landfill behind a retaining wall will produce approximately 150 acres of which the port will be able to use about 120. That will provide space for four berths.

Halpin estimates that Sea-Girt will become fully operational by 1987.

Finally, on the drawing board is the Masonville Marine Terminal, across the harbor from Dundalk and Sea-Girt, at a waterfront area known as Fairfield. It will be a 350-acre, six-berth, container facility that is expected to be built in the early 1990s.

Until now, the MPA has constructed all its facilities as public terminals, operating them on a "first come, first serve" basis. But this could change in the future.

"We hope," says Halpin, "that we can interest the private sector–the terminal operators–into making investments in our facilities. I would like to see us get to the European concept where the government agency simply constructs the infrastructure and a private operator follows by putting up the superstructure. We'll build the berth, the bulkhead and we'll provide the general facilities. But construction of warehouses and sheds, and the installation of cranes and all other cargo handling equipment would be left to private investment.

"I don't know whether we'll be able to do it. But we'll certainly give it a try at Sea-Girt."

As Halpin sees it, the MPA's job is to plant the seed for development and then open the door for private industry to join in the venture and ultimately take it over.

"There is no question in my mind that the private sector can do a better job in operating an ocean terminal than a public agency which is impeded by a fixed program and rules set by the state," says the head of the MPA. "The advantages of private investments are clear to everybody: such investments create more jobs and generate greater tax revenues, which in turn results in more income for the state and an overall boost to the economy." *(Port of Baltimore Magazine)*

Dock Board cuts rates to increase cargo: Port of New Orleans

The Port of New Orleans has reduced tariffs for the handling of three different commodities in its continuing effort to attract more cargo to New Orleans and to meet competition from other ports. The new rates, which became effective on January 1, were approved by the Board of Commissioners of the Port of New Orleans at its regular meeting.

The rate for unloading from rail cars U.S. government cargo going abroad through the Port was reduced to $5.50 a ton. Last fall this same rate was lowered from $7.14 a ton to $6.10 a ton. In addition, wharfage charge for these goods (the standard charge for the use of Port facilities) was lowered by one-third from 90 cents a ton to 60 cents a ton.

The new rates, according to Henry G. Joffray, assistant executive port director, will make New Orleans highly competitive with ports in the western Gulf. The Mandeville Street Wharf had been designated a consolidation center for receiving U.S. government bagged food goods. This will make it easier for shippers to arrange for the export of these goods.

The car unloading rate for the export of steel pipe in unitized bundles was reduced from $11.56 a ton to $8.56 a ton, a cut of 25%. This new rate applies to bundles of steel pipe weighing from 6,000 to 8,000 pounds and having a maximum length of 43 feet.

Another unloading rate reduction was applied to the export of unitized bundles of lead ingots, with a minimum of 800 tons per shipment. This rate went down from $4.27 a ton to $2.75 a ton.

Most of the action taken by the Dock Board was in response to the local maritime community, which has appeared before the Board to request lower rates so that more cargo would come through New Orleans instead of through other ports. Dock Board Commissioner George J. Schiro commented that the actions by the Board to establish competitive rates demonstrated the teamwork among Port officials, freight forwarders, steamship lines, carriers, and local maritime labor to improve the movement of cargo through the Port. "This should result in New Orleans retaining its standing as one of the world's leading ports," he said. *(Port Record)*

Port 1981 tonnage reaches record high: Port of New Orleans

The Port of New Orleans saw an increase of 12.6 million tons during calendar year 1981 for a record tonnage of 188.9 million tons; according to figures released by the U.S. Army Corps of Engineers. This continued a ten-year rising trend in the figures reported annually by the Corps. The 1981 tonnage total compares with 120.1 million tons in 1971, a 57% increase. The Corps also noted that New Orleans was the only port among the nation's five leading ports to show an increase in 1981.

"Considering the global recession which is affecting the export and import trade through world ports," said Edward S. Reed, executive port director/general manager of the Board of Commissioners of the Port of New Orleans, "we were pleased with the tonnage increase of last year."

The total of 188,850,600 tons recorded by the Corps of Engineers in 1981 represents both domestic and foreign cargo. The Corps defines the Port of New Orleans as including the Mississippi River from Norco, La. to the head of passes.

Compiled by the U.S. Army Corps of Engineers Waterborne Commerce Statistics Center, the report, which will be available to the public at a future date, breaks down the total into hundreds of products and commodity categories. The Corps noted that in categories involving cargo movements of one million tons or more there were increases in shipments of wheat and soybeans, with a "spectacular" fivefold increase in sorghum grains.

Other increases in those categories were in coal and lignite, the tonnage of which more than doubled; prepared animal feeds and sugar; distillate and residual fuel oils; and iron and steel pipes and tubes. *(Port Record)*

1982 waterborne commerce economic impact: Seaway Port Authority of Duluth

Waterborne commerce through the Port of Duluth-Superior in 1982 resulted in an economic impact on the Twin Ports region of more than $187 million, according to figures released today by the Seaway Port Authority.

A total of 26,763,451 metric tons of cargo moved through the Twin Ports in overseas and domestic trade last year.

The economic impact figures reflect only the impact on the wages earned and goods and services provided directly in the movement of cargo. The actual cost of the commodities is not included. Included are earnings by longshoremen, warehousemen, linehandlers, tugmen, pilots, waterfront inspectors and surveyors; ships' charges for repairs, supplies or crew expenditures, and various other port services. Railroad workers, truckers, stevedoring contractors, vessel agents, freight forwarders, brokers and related ship service employees and fees are also included.

A formula for determining the local economic impact of waterborne commerce was developed in a 1976 economic impact study by J.F.P. & Associates, Duluth, based on a 1974 University of Minnesota-Duluth study. It is adjusted annually at the rate of inflation according to the Consumer Price Index as used by the Minnesota Department of Economic Security.

The same study also provides for a multiplier effect as determined in a 1970 study of the "Quantitative Impact of the St. Lawrence Seaway on the Hinterland Economy" by the University of Wisconsin-Milwaukee. This study demonstrated a secondary or indirect economic impact of 2.57 times the direct impact. Under this formula, the secondary impact of the 1982 shipping season on the region would be $482,354,259, or a total of direct and secondary benefits of $670,040,741.

The movement of grain, sunflower seeds and grain by-products through the port created the greatest dollar impact in term of employment with a total of 5.6 million metric tons generating a direct impact of $102,531,719.

Movements of dry bulk cargoes such as taconite pellets, coal, lime tone, cement and salt generated $71,724,140 on a total of 20,789, 606 tons.

General cargo imports and exports totaled 89,377 tons and a total impact of $7,067,039.

Direct Impact of Commercial Shipping in Duluth-Superior 1982

Cargo Category	1981 Per Ton Impact	1982** Per Ton Impact	1982 Tonnage (Metric)	1982 Total Impact
General Cargo (Including Lumber and Steel Products)	$75.60	$79.07	89,377	$ 7,067,039.39
Bulk Liquids (Petroleum Products and Misc. Liquids)	$27.95	$29.24	8,182	$ 239,241.68
Grain, Seeds and By-Products				
Domestic	$10.13	$10.60	1,345,411	$ 14,261,356.60
Canadian	$10.13	$10.60	1,154,844	$ 12,241,346.40
Overseas Grain	$22.41	$23.44	1,967,771	$ 46,124,552.24
Overseas Seeds & By-Products	$25.01	$26.16	1,143,137	$ 29,904,463.92
Total all Grain, Seeds, and By-Products:			5,611,163	$102,531,719.16
Misc. Bulk (Includes Scrap, Woodpulp, Newsprint, Fertilizer)	$22.08	$23.10	265,123	$ 6,124,341.30
Dry Bulk (Includes Iron Ore & Concentrates, Coal, Limestone, Salt, Coke Potash)	$ 3.30	$ 3.45	20,789,606	$ 71,724,140.70
		Total 1982:	26,763,451 MT	$187,686,482.23
		1981:	36,406,820 MT	$225,438,237.03

**NOTE: Impact figures based on economic impact study by UM-Duluth and J.F.P. & Associates with yearly revisions at the rate of inflation. 1982 rate of change in CPI set at 4.6% as determined by the Minnesota Department of Employment Security and "all Urban-CPI".

Program for 10th International Trade Conference: South Carolina State Ports Authority

An impressive array of speakers and workshop panelists is nearing finalization for the 10th annual International Trade Conference, scheduled May 17-19 in Charleston. In addition, the traditional second-night outdoors party has been changed to a beach site.

Built around the theme, "Exploring Trends in World Commerce", business meetings will feature four major topics and two foreign port presentations. The keynote address will be delivered by a prominent industrialist, Conference Honorary Chairman John A. Luke, president, Westvaco Corporation, New York.

Trends to be explored by recognized speaker/specialists are U.S. Trading Companies, Innovative Financing/ Insurance, Maritime Reform Act, and Role of NVOCCs. One or more afternoon workshops will consider related international developments and documentation procedures.

Port traffic in Antwerp due to set up new record

After the first nine months of this year cargo traffic in the port of Antwerp showed a largely positive balance of +9.5% over last year's result.

From data of the Port Authorities it appears that during this particular period in all 65.30 million tons of cargo were handled as against 59.61 million tons in the corresponding period of 1981.

This traffic increase was entirely due to incoming cargo traffic which marked a considerable growth for general cargo (+17%) as well as for bulk cargo (+25%). Exports and outgoing traffic on the contrary decreased by 6.8%.

In the bulk sector liquid as well as dry bulk cargo marked positive results. Crude oil traffic rose by 88% to over 3.92 million tons and traffic of oil derivatives by 18% to over 11.43 million tons. The main sectors of the dry bulk cargo traffic viz. iron ore (+3%), coal (+41%), grain (status quo) and fertilizers (+18.2%) totalled 23.4 million tons after the first 9 months of this year.

In the general cargo sector especially good results were booked for bagged cargo: cereals with 950,000 tons (+49%), flour and sugar with 1,276,000 tons (+25%) and cattle fodder with 120,000 tons (+60%).

Exports of iron and steel products remain subject to the economic recession and their total traffic is further declining, in spite of a huge increase in incoming traffic.

The handling of 591,000 tons of fruit in 9 months is a clear indication of the fact that Antwerp is definitely becoming Europe's largest fruit port.

Roll-on/roll-off traffic accounted for 1,314,000 tons (+2.2%) during the first nine months of this year.

Antwerp traffic prospects

So far this issue has dealt with the further expansion of the port of Antwerp on both banks of the river as well as with the improvements with regard to the maritime access.

If this new basic infrastructure already points at an unswerving faith in the port's future development, then a similar feeling can be deducted from the traffic forecast. On 1 July 1981–just before the important (advantageous) monetary rearrangements–the Study Centre for the Expansion of Antwerp (S.E.A.) completed an inquiry about the future prospects of most Antwerp maritime cargo flows

until 1985.

The future of the world economy remains uncertain. For the time being there can be no talk of a fundamental recovery. At the very best the various Western countries can hope for a slight improvement in the economic indicators. It is well known that the demand for transport, and for port services as a part of this, is very closely dependent upon the economic situation.

These two facts mean that it is difficult to express in figures the future prospects for port traffic which is subject to so many uncertainties. Nevertheless the *Study Centre for the Expansion of Antwerp* has made an attempt to evaluate the future prospects for cargo traffic on the basis that such a prognostication of traffic prospects cannot be used as an absolute criterium but as an indication: it is not the figures themselves which are important but the orientation behind them and the hypotheses which lead to certain conclusions.

Antwerp's maritime cargo traffic in 1985 can be expected to lie somewhere between 81.5 million and 94 million tons, the most probable total being somewhere in the middle in the region of 86.3 million tons. These figures should be viewed in the light of port traffic in 1981 which was just below the 80 million ton mark. It is important to note that this middle figure of 86 million tons can be achieved with a moderate industrial growth rate in the Belgian and E.E.C. context of about 1.5% per year. Given better economic circumstances a traffic target figure of 90 million tons can be envisaged or even surpassed.

Such an extremely compact way of presenting a survey, namely to give one general total for all the tonnage of fruit, iron and steel, sugar, coal and dozens of other commodities, each with their own transport, storage and handling requirements, is of little value for anyone interested in port traffic. For this reason the Study Centre has attempted to estimate separately the future prospects for almost 50 types of cargo. In many cases this was to venture out into uncharted waters both with regard to method and basic economic data.

Antwerp–General cargo maritime traffic 1985
(in 1,000 tons)

	Autonomous evaluation*	Mechanical evaluation*
Incoming maritime traffic	**12,587**	**14,158**
Rice	66	66
Fresh fruit	830	830
Raw materials for textiles	200	159
Logs, sawn timber, articles in wood	1,110	1,045
Rubber	59	59
Molasses	230	233
Coffee	83	83
Cocoa	17	17
Meat, refrigerated or frozen	30	34
Animal and vegetable oils and fats	70	77
Iron and steel	2,000	3,594
Non-ferrous metals	650	780
Chemical products	2,100	2,095
Paper pulp, cellulose	1,200	1,050
Motor vehicles	350	421
Machinery	322	322
Metalware	125	131
Yarns and fabrics	190	191
Unprocessed paper and cardboard	400	279
Outgoing maritime traffic	**18,706**	**23,059**
Sugar and confectionery	750	784
Beverages	200	208
Dairy produce	383	383
Meal and flour	400	271
Malt	500	749
Iron and steel	7,500	11,084
Non-ferrous metals	425	543
Cement	350	507
Processed building materials	174	174
Chemical products	3,250	4,240
Motor vehicles	400	493
Machinery	650	652
Metalware	300	427
Glass and glassware	187	182
Yarns and fabrics	106	106
Unprocessed paper and cardboard	90	90
Incoming + outgoing maritime traffic	**31,293**	**37,217**

* The result of the mechanical evaluation was obtained by a mathematical derivation process. The results thus obtained were tested using a number of economic evolution and structure data. The result of these tests forms the autonomous evaluation.

Antwerp–Bulk cargo maritime traffic in 1985
(in 1,000 tons)

	Minimum	Maximum
Incoming maritime traffic	**35,600**	**40,050**
Grain	3,000	3,500
Cattle feed	500	700
Oleaginous seeds and fruit	600	700
Solid fuels	8,500	9,000
Crude oil	3,500	4,000
Mineral oil distillates	4,400	5,000
Iron ore	8,500	9,500
Non-ferrous ores	1,400	1,650
Unroasted iron pyrites and sulphur	800	1,000
Natural fertilizers	1,300	1,500
Artificial fertilizers	1,000	1,200
Other bulk cargo (1)	2,100	2,300
Outgoing maritime traffic	**14,600**	**16,950**
Grain	3,000	3,500
Mineral oil distillates	5,100	6,000
Bunkering material	1,800	2,000
Industrial sand	1,000	1,100
Sulphur	200	250
Artificial fertilizers	2,300	2,600
Other bulk cargo (2)	1,200	1,500
Incoming + outgoing maritime traffic	**50,200**	**57,000**

(1) Other incoming bulk cargo in the past amounted usually to a tonnage of about 800,000 t (crude oil products, scrap-iron, pulpwood). It was assumed that this will increase by 1985 to 2.1 to 2.3 million tons because of the import of c. 1.5 million tons of L.P.G. by that year. This is the figure planned by Distrigaz.

(2) Other outgoing bulk cargo in recent years amounted to 1 million tons and was more spread over various products. An increase to 1.2 to 1.5 million tons seems very plausible in view of the large-scale exports of coal by seagoing vessel (especially to the United Kingdom) in some years.

Port of Bordeaux-Le Verdon in 1982

With the entry into service of the container and ro-ro terminal on the fringes of the ocean, the Port of Bordeaux-Le Verdon has become, in these early years of the 1980s, a vast port complex, noted for the multiplicity of its specialized facilities catering for all types of trade. With the redevelopment undertaken and completed in 1982, the Port has aimed at improving the service offered to shippers whilst at the same time reducing call costs for vessels.

Service improvements

Over the centuries, Bordeaux has acquired a "particularity" that of being a port for general cargo, to some extent due to its trading traditions, but mostly, because of the skill and efficiency of its dock labour force. In 1982, this particularity was especially apparent, since nearly 80% of the regular liner services operating out of our Atlantic seaboard, called at Bordeaux-Le Verdon.

As Mr. Louis PENSEC, the Minister for the Sea, stated during his recent visit to Bordeaux, last October:
"The vitality, the dynamism and the economic strength of a port cannot be judged on throughput tonnages alone; it can only be assessed in situ, since the tons of goods don't have the same value and the added value of one ton of general cargo, in terms of employment and port activity, is much higher than that of a ton of bulk cargo".

The Gironde port today, has some forty links to more than one hundred and fifty ports spread throughout the continents. It is this basic trade which, in 1982, it tried to develop even further, by improving both the capacities of the Le Verdon terminal and the port sector at Bassens and, in a more general way, by increasing the range of its fixed scheduled links.

Over the past year, several shipping companies have strengthened Le Verdon's position as a fast turn round port, in the international context. Such is the case, in particular, where services to West Africa are concerned; French carriers, Société Navale Chargeurs Delmas Vieljeux, (users of the terminal since it opened), decided to call there with their new containerships and also to serve the Indian Ocean, by developing their CAPRICORNE SERVICE. Similarly, since June 1982, American shipowners, WESTWOOD SHIPPING LINE, strengthened the links maintained over the past few years by STAR SHIPPING COMPANY, between Le Verdon and the West coast ports of the United States and Canada. Finally, SEALAND, one of the world's leading carriers, introduced a weekly service in March 1982, which connects up to other services it operates and provides (import and export) links to all the different regions they serve, notably, the USA, Canada, the Middle East and Northern Europe.

For Bassens, 1982 will be remembered as the year it "won" a new trade; newsprint, which is destined for the large regional daily newspapers.

Reduction in call costs

In order to become more competitive, the Port of Bordeaux-Le Verdon undertook a series of projects designed to speed up throughput rates, facilitate the possibilities of reception and, at the same time, to reduce call costs for ships. With the aid of State and Local Government it has modernized to accommodate ever increasing sized vessels and to provide ideal conditions to cater for them. Completed in 1982, this work took place mainly at Le Verdon and Bassens.

Designed for containerships and large ro-ro vessels, Le Verdon is the efficient complement to the estuary port. With no locks, it is accessible at any stage of the tide and one of the rare ports in the world which operates 24 hours a day, every day of the year. Since it was commissioned, Le Verdon's terminal as fully justified the hopes placed in it. Its traffic has increased 10% in 1982.

Since the quay was extended (600 m) at the end of 1981, Le Verdon has been able to cater simultaneously for two third generation containerships. Its storage areas have been extended to 10 ha and today, with top rates of 30 containers, the gantry cranes unload an average of twenty containers an hour. They have enabled Bordeaux, to obtain rates, where general cargo handling is concerned, which are twenty times faster than those that existed at the beginning of the 1960s. Such results illustrate the evolution which port equipment has and is undergoing.

At Bassens, the redevelopment work, completed in 1982, has followed a similar aim: to offer port users reliable and efficient handling equipment. It has enabled the different trades to be split up between the up river and down river sites of this sector of the port, thereby using the nautical possibilities to the best advantage. Bassens-amont (up river), is today, devoted to general cargo and a first stage of the redevelopment has been completed with the introduction of a new shed of 6 000 m^2. For its part, Bassens-aval, is given over to heavy bulks and timber (for which a specialized terminal was brought on stream in 1981).

To cater for the heavy bulk trades, the Port Authority has adopted an evolutive strategy, which will enable it to accommodate ore carriers of 80 000 tdw partially ladened in 1983 and long term, vessels of 120 000 tdw with draughts of 10 to 11.5 m depending on the coefficient of the tide, all in the Bassens sector. The vast new storage areas of the new terminal at Bassens are fed by fast flowing conveyor belts (2 000 t/h) the mobile section of which is operated by SUMAV (SURSOL Manutention Aquitaine Vrac) who also financed it. This group is composed of the bulk stevedoring companies which operate in the Bassens sector regularly, (JOKELSON & HANDTSAEM, DOCKS SURSOL, SOCIETE BORDELAISE DE MANUTENTION & D'INDUSTRIES MARITIME and DOCKS INDUSTRIELS). The storage ares of the multi-bulk terminal at Bassens (7 ha of which is reserved for the coal trade) are capable of coping with a throughput of 1.5 Mt/annum.

Port equipment in this sector is also designed to cater for oil cake imports which are dispatched directly to a shed near the quayside by two independant conveyor networks, each with a flow of 350 t/h, having carried them through an automatic weighing station. This equipment was installed by a consortium known as GESVRAC (Groupement d'exploitation et de stockages de vrac) composed by two Bordeaux companies, SUMAV (SURSO Manutention Aquitaine Vrac) and LACOSTE-SCAC.

Thanks to its own investments, those of the State and the much appreciated aid of DATAR, the Aquitaine region, the Gironde departement and the Bordeaux Urban Community, the Port of Bordeaux-Le Verdon was in 1982 able to furnish itself with an equipment which meets the needs

of both its industrial and commercial vocations. By relying on the two main centres of development, Le Verdon, the throughport and Bassens, the estuary port, it has consolidated its position and remains thus an essential instrument in the economic development of the region.

Medium term development projects scheduled for the Port of Bordeaux-Le Verdon

The Port of Bordeaux Authority has for numerous years continuously adapted its facilities to both the new techniques of handling and the—spectacular—evolution in the size and design of ships. It intends to continue this policy in the years to come, by simultaneously following four principal objectives.

Improving access

The characteristics of the access channel to Bassens and its turning basins, currently limit the size of vessels to a length of 230 m (60 000 dwt class). They allow vessels drawing 9.20 m at any stage of the tide to be accommodated, (which means that in optimal conditions, draughts can be up to 11 m).

In 1983, improvement projects are to be undertaken, so as to provide the access channel with the characteristics required to cater for carriers of 80 000 tdw when lightened. Full term, the Port Authority's objective is to be able to accommodate ore carriers of 120 000 tdw, (270 m in length) at Bassens when half ladened.

The total casts of these works amounts to 120 MF, (1982).

Renovation of equipment

Over the next few years, the Port Authority will progressively replace a whole series of low powered cranes which will become obsolete, because of the introduction of new vessels (much larger in particular).

In fact, the port equipment is constantly being renewed and improved. The most striking example, was provided by the container gantry cranes at Le Verdon, which can handle on an average some 20 containers an hour, but it would be unfair to ignore the classic quayside cranes. In 1960, the 6 ton cranes, working with a grab, had an outreach of 18 m; whereas, those brought into service at the Bassens multi-bulk terminal in 1982, use 15 t grabs and have an outreach of 40 m.

These two examples are the perfect illustration of the necessity to renew cranage, scheduled at a rate of 2 or 3 per annum, and amounting to an annual investment of about 20 MF.

Diversification at Le Verdon

Thanks to its original location on the estuary, the Port of Bordeaux-Le Verdon has been able to develop port facilities along its one hundred kilometer banks and to "specialize" them according to their geographical location and the nautical possibilities available.

Backed-up by the intermediary sites of Blaye, Pauillac and Ambès, the two focal points of port development are Bassens, (for all trades, except oil) and Le Verdon. Since 1967, the latter has catered for tankers of 300 000 tdw partially loaded or 120 000 t fully ladened (drawing 15 m). But, since 1976, Le Verdon has also become a container and ro-ro terminal, open 24 hrs a day, every day of the year and accessible, with no difficulties from tide or locks to the largest containerships in the world fleet (12 m draught).

However, the site of Le Verdon is such that not only can it cater for the largest vessel, but also for the commercial or industrial installations they require. The objective of the Port Authority therefore over the coming years is to diversify operations at Le Verdon, following the pattern of traffic flows, especially the bulk trades, (coal, liquified gas, agro-food, for example).

Industrial promotion

A port is but an instrument at the service of, commerce of course, but also industry. And the future of the Port of Bordeaux-Le Verdon is strictly linked to the industrial future of the estuary.

In the same way that it has a series of specially selected harbours, so it has a whole range of industrial zones spread out between Bordeaux and the sea, which it will be promoting during the next few years. It is true that the international economic climate is at present far from ideal. But Bordeaux-Le Verdon has a number of advantages, particularly in the energy and agro-food sectors. It is in these two domains, so closely tied to the "Department"—county, to the Region and to all the local population, that it must fight to ensure its future.

1982's Dunkerque traffic figures—An overall drop but some comfort for the future

If traffic was down by 12.5% with 32.9 million tonnes it was mainly due to a loss of 2.6 MT in ore and 2.1 MT in coal. On the other hand, oil products were steady thanks to huge imports of refines products. Delays in the shipment of agricultural products such as cereals and sugar added to falling exports in steel products spelled a drop in tramping. Regular lines, however, showed an encouraging upward trend with outstanding figures for Cross-Channel traffic (record number of passengers: 775 984). For regular lines traffic rose by 14%, in particular towards Northern Europe (+71%), the Far East (+52%) and the West Coast of Africa (+17%).

Results for container traffic are positive (67 382 T.E.U. which represents 800 186 tonnes): 20' boxes are up by 7% at the Western Harbour while at the Eastern Harbour the upsurge in the containerization of conventional lines spelled a 22% rise.

Finally, the bringing into service in 1983 of the new quay for heavy bulk (ships of up to 225 000 TDW), the imminent construction of a terminal for cereals and a planned expansion of passenger and freight traffic by Sally The Viking Line augur well for future traffic.

Cross Channel—Record year for Dunkerque

1982 showed a record figure of 775 984 passengers; an increase of 42%. The increase was made possible thanks to Sally the Viking Line operating the Dunkerque-Ramsgate route (430 619 passengers for 611 calls, with one ship from May 3rd to June 15th and from September 5th to the end of

December and two ships in full season). The expansion of the line did not only affect the port but also had a positive impact on Dunkerque as a whole. If two ships are operated most of the year, we can reasonably expect a traffic in excess of 1 million passengers for 1983.

Freight traffic has risen steadily with a significant increase in the overall tonnage of general cargo transported by rail (Dunkerque-Dover by Sealink) and in the number of trucks (+35% in 1982). Total figures for Cross-Channel traffic stand at 1 459 797 tonnes (+12,8%). Cars with drivers bore the palm with an increase of 97% in one year (87 562).

Finally, we must lay special emphasis on an original means of transport: rail-road traffic rose by 3% and it shows even brighter prospects with the coming into operation next spring of new lo-lo handling equipment intended to replace existing ro-ro equipment. 7 000 sqm of back up area are being re-surfaced at the Western harbour Cross-Channel terminal to facilitate the switch.

Franco-Canadian conference: Port of Le Havre

A Franco-Canadian conference was held at Honfleur last October so that ways and means of developing trade between Canadian ports and those of the Lower Seine could be discussed by as many of the people professionally concerned as possible. With the backing of the ports of Le Havre and Rouen, which the participants visited in turn, one of the main subjects considered was the possibility of setting up a Canadian free zone on the Seine estuary, in line with the Estuary Ports Commission's declared aim of becoming Canada's major trading partner.

Underlying the conference was the absolute need felt on both the French and Canadian sides to recapture the transport market by steering trade between the two countries in the direction of their own ports. Their plan of campaign is based on the crucial assets possessed by the Seine estuary, in the form of an exceptional geographical location, first-rate commercial and maritime back-up facilities, large stretches of land available for building, and competitive construction and installation costs.

The two-day meeting was most instructive and was attended in part by both the French Minister of External Trade, Mr. Jobert, and by the Canadian Ambassador to France, Mr. Dupuy. It also brought together senior civil servants and top management from ports, shipping companies, forwarding agencies, trading companies and finance houses, who were thus able to work out the most promising lines of action, with every chance of getting things moving quickly, due to the presence on both sides of the people responsible for making the final decisions.

Hamburg holds the full effects of the recession at bay but 1983 outlook is not bright

"A cursory glance at the total cargo volume for 1982 gives the impression that the year was a fairly 'normal' year for the port, but consideration must be given to the fact that general and bagged cargo development was not so satisfactory. Imports in these categories showed a drop of 7.6 per cent and exports fell back 5.9 per cent", Helmut F.H. Hansen, Executive Director of Port Commerce, Port of Hamburg, The Representative, commented recently.

According to figures presented by the Port of Hamburg Authority Hamburg handled 61,948,000 tonnes of merchandises of all kinds, an increase of 0.9 per cent over the 1981 figure. Liquid cargoes tagged up positive results–crude, mineral oil products, alcohol etc.–with a growth of 15.8 per cent to 19.9 million tonnes and bulk cargoes such as grains, oilseeds and animal feed rose 3.2 per cent over the previous year's total to 11.9 million tonnes. Losses occured last year in grabbed cargo–coal, ores and phosphate. The worldwide crisis in the steel industry had its effect and the total cargo in this category handled in Hamburg fell 9.4 per cent to 11.7 million tonnes.

The drop in the labour intensive and valuable general and bagged cargo sector–down 6.6 per cent to 18.45 million tonnes–is indicative of the continuing poor trade situation. Hansen said: "The position would have been worse if it had not been for West German exports, still at a good level, and business from our transit partners, that had a stabilising effect."

Container handling drops

Container traffic, instead of being the 'pace-maker' as in the past was hard hit last year by the recession. Although the absolute number of boxes increased from the 714,075 handled in 1981 to 714,444 last year the volume of cargo dropped from the 8.1 million tonnes recorded in 1981 to 7.8 million tonnes in 1982. Measured in terms of twenty-foot containers a slight minus emerged–906,874 TEUs in 1981, whilst last year the figure was 'only' 889,252 TEUs. "Seen in the overall development of general and bagged cargo the result is 'normal'. This was also evident in the containerised proportion of total cargo–41.1 per cent in 1981 rising to 42.5 per cent last year", Hansen explained.

Of primary importance for the plus in total cargo handled was the development of export traffic. Exports accounted for 22,891,000 tonnes, a 9.7 per cent increase over the 1981 figure. Liquid cargoes showed a massive 62 per cent increase to 5.6 million tonnes–mainly mineral oil products, one of the strengths of Hamburg's export business. Cargo handled by suction processes also showed an increase, this time of 20.4 per cent to 3.9 million tonnes. Note must be made here, however, that transit lots, because of statistics procedures, are shown twice. Imports of grabbed cargoes, coal, ores and the like, dropped 3.8 per cent to 2.6 million tonnes as did imports of general and bagged cargo, by 5.9 per cent to 10.8 million tonnes.

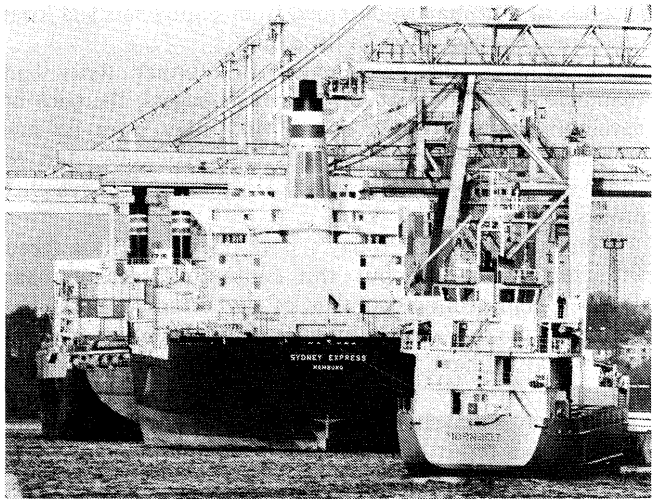
Imports volume slides

The knock that cargo handling in the Port of Hamburg took last year was primarily due to a drop in imports. The figures for 1982 show a drop of 3.6 per cent to 39,057,000 tonnes when compared with 1981. With the exception of liquid cargoes handled–up 4.2 per cent to 14.3 million tonnes–all other categories showed a slide downwards: cargoes handled by suction processes down 3.5 per cent to eight million tonnes, grabbed cargo imports showed a drop of 10.8 per cent to 9.1 million tonnes and general and bagged cargo incoming down 7.6 per cent to 7.6 million tonnes.

Hansen said, however, on the more positive side that the Port of Hamburg maintained its market share in almost all

categories, and once or twice showed a slight improvement, "showing that Hamburg's port facilities were still highly competitive." Turning to 1983 he said: "It is generally felt in the Port that the economic situation will not show much improvement this year."

Hamburg stays on top with 890,000 boxes handled last year



Recession, worldwide, has not brought the containerisation process to a halt but it has slowed down the change to boxes. This can be seen from the final figures—in most ports the statistics for 1982 show a decline—as well as for the rate of containerisation, that proportion of general and bagged cargo that is lifted in boxes.

This pattern is true for the final figures presented by the major West German ports. In 1981 the Port of Hamburg handled a good 900,000 TEUs, but last year this figure dropped 1.9 per cent to 889,252 boxes with a total weight of 7.8 million tonnes, but the proportion of containerised cargo rose from 41.1 per cent in 1981 to 42.5 per cent last year.

Helmut F.H. Hansen, Executive Director of Port Commerce, Port of Hamburg, The Representative said, commenting on the figures: "Considering that general and bagged cargo dropped in total 6.6 per cent the results are fairly positive on the whole and show once more that the Port of Hamburg is one of the ten most important container terminals in the world."

Asked if Hamburg would be able to maintain this positive position in the future Hansen said: "There is no reason to believe that the position of our port will change. This does not mean to say, however, that there might not be shifts in accent from one trade route or another. It is true to say that even if there was a substantial increase in sea-borne exports the process of change to boxes would have little effect on the rate of increase, which was certainly not the case only a few years ago. The already high proportion of containerised cargo has to be seen in conjunction with other successful, rationalised handling and transportation technologies, ro/ro traffic for example."

During 1982 approximately DM 250 million was invested in extending and modernising the Port of Hamburg's terminals, despite the unhappy economic situation, financed by the Port itself and from public funds. The Port has now, apart from special terminals devoted to container handling, a number of multi-purpose facilities staffed with people with all the know-how necessary. A spokesman for the Port said that Hamburg now has more than two million square metres of port space for handling and stowing boxes.

Forward-looking land acquisition policy: Port of Hamburg

The senate of the Free and Hanseatic city of Hamburg will continue to pursue the trusted and tried policy of future-oriented provision of surfaces for the port. This unanimous view emerges from several statements by members of the Hamburg city-state government. They were prompted by demands from a political grouping in Hamburg which, for environmental protection reasons, opposes further expansion of the port territory.

The senate on the other hand points out that the ports has succeeded in adapting so smoothly to the many diverse developments in maritime transport only because of the consistently observed land policy in the last past decades. Only in this way has it so far been possible to safeguard the competitiveness of the port, on which, of course, more than 100,000 workplaces directly or indirectly depend in Hamburg.

The same principles must also apply for the future. The growing importance of Hamburg as a transit port for the neighbouring countries in North, East and Central Europe, and the advance of containers with their considerably higher demands on surface in the handling process show that the port will continue to expand. Therefore the possibility must exist at all times for interested handling or industrial firms to receive, if required, suitable tracts of land at short notice. In order to ensure this, planning and preliminary work has to be carried out in good time.

In the past fifteen years more than 700 hectares of port territory were allotted, mainly for the building or expansion of handling facilities or for port-oriented industrial companies. In this respect, new surfaces have been activated and existing terminals modernised and extended.

Modernisation in the eastern Free Port

An up to date example of structural adaptation and modernisation of existing port installations is the work in the eastern part of the Free Port. The terminals here are among the oldest general cargo handling units in the port and therefore no longer accord with the demands of new transport and handling techniques.

In the meantime several terminals here have been totally modernised; for instance the Zellpapp Terminal in Baakenhafen, the Afrika Terminal, the Terminal O'Swald and the Südwest Terminal. Other restructuring operations are in the offing.

The container and ro-ro ships introduced with the new transport techniques can, however, only be dispatched at the new terminals if the Northern Elbe also is expanded accordingly to ensure safe access for ships of this kind. It must therefore have throughout a navigational channel depth of 12 (perhaps even later 13) metres, and a navigational channel width of 170 metres.

Whereas modernisation of the terminals is mainly the

(Continued on next page)

Modern deep-water port has far-reaching social significance — with or without making a profit:

SHIP-TRANS-PORT Symposium

(The SHIP-TRANS-PORT symposium was organised jointly by the Rotterdam Municipal Port Administration (Port of Rotterdam) and the Maritime Research Institute Netherlands (MARIN) to mark their "golden jubilee" (50th anniversary).)

First conclusion: An average port cannot possibly survive without a clear-cut and persistent management system. The schedules for our procedures must always be kept clearly in mind in everything we do. This is not to say that we should slavishly stick to these schedules; this would be quite impossible. But it is essential that they are part of our way of thinking.

Second conclusion: A port is a drive mechanism—a complex machine producing stimulating effects far into the hinterland. Importing raw materials cheaply makes it possible to moderate the export prices of one's products. Therefore a big port is of major social significance, which will be greater still according as the port succeeds in passing on to the hinterland the advantages of using very large vessels. This significance will not change, even if the port itself does not make a profit; its share in the economic activities of the area it serves will remain large.

These observations ("If everybody was convinced of their correctness, I would not have to make them") were made by Mr. J. Biesheuvel, assistant managing director of the Port of Rotterdam, at the beginning of his contribution to the Ship-Trans-Portsymposium.

Elucidating his address on the necessity of modern management systems, he asked his audience how long it was ago that decisions on the infrastructure of a port were made mainly by one man, the pioneer. We need not go back very far in history to come upon a kind of pirate's mentality—a period in which important decisions were made on the grounds of information obtained from shipowners and local industries, or even: from "a little bird".

Nevertheless the entrepreneur of former times had tremendous advantages over today's managers: the pace of developments was much slower and they were far less complex. Moreover, capital was not expensive, due to which he could afford to wait a bit longer for his first profits.

Compare this with today's port operator. He is faced with huge scale-ups; but the continuing recession has deprived him from a number of certainties. Capital has become expensive and the requirements of proper environmental control have put an extra burden on him. Developments in far-away countries which he cannot possibly change, may seriously damage some of his divisions: a trade embargo as a result of an international conflict, a local war elsewhere in the world—the consequences might affect him.

We have indeed moved far away from the days in which a port consisted of a quay, a crane and some people—caps in hand—scanning the horizon for the ship which might be good enough to come and reduce the traditional overcapacity.

A port is an industry in which widely varied groups have to cooperate; therefore the introduction of a modern management system calls for an industrial approach. This implies that it has to formulate all wishes and demands, outline its strategy, specify the first objectives and draw up its policy; that it must structure the management strategy and stick to it.

Bigger risks

The lack of sufficient strategic planning was still noticeable in some areas as recently as in the 1960s and 1970s.

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responsibility of the handling operating firms, the expansion of the Northern Elbe is the liability of the city of Hamburg; it began in 1980 and is scheduled to take over four years.

The most difficult part measure for the port engineers is to safeguard the St. Pauli Elbe tunnel built in 1911, the upper point of which is only 14.50 metres beneath the water's surface. With the help of a diving bell, the soil on top of the tunnel is being removed in sections and the tunnel then covered with a 50 to 60 centimetre thick concrete layer, with slanting steel sheets, pointing downwards, providing protection against the tunnel tube floating upwards or being damaged from above.

New reserve surface necessary

Admittedly, modernisation and structural adaptation of the eastern port section, as important as it is, cannot alone solve the problem of future surface requirements for the entire port. To this must be added the availability of further reserve surface.

The legal basis has already been created by virtue of the Port Development Law. In the southwest, bordering on the present port area, there are still large stretches of terrain in the Elbe marshland region which are currently being farmed. These are to be developed, section by section, and incorporated into the port complex as soon as the need for new terminals arises. The fact that in the process the inhabitants of two centuries-old villages had to abandon their home territory does not make the decision easy, but in the interest of the port it is unavoidable.

Thus, there are assurances that the policy of Hamburg's city fathers, begun at an early stage, of long-term securing of land surfaces for the port, now and in the future, is being continuously adhered to; for the world's maritime traffic is intended always to find in Hamburg the terminals which it requires. *(Port of Hamburg Topics)*

Port managers waiting with expansion plans for favourable decisions by liner companies suddenly found that a competitor had beaten them to it. The other party had taken a chance and won by wittingly anticipating probable future demand and, therefore, by speculative building.

Operators who ensured themselves in this way of more business undeniably took some risks, but they did so virtually always with a confidence based on calculations.

However, how much bigger will such risks be in the 1980s? Huge projects call for such lengthy preparations that the need of sound long-term prognoses is bigger than ever, for only then will it be possible to have such expensive facilities available when the new demand sets in as expected. Moreover, the cost of new facilities have run so high that only very few ports will be able to afford anticipating future developments.

This means that a great deal will depend on a fairly exact forecast of the time when the new infrastructure should be available; this might even be decisive for the success of a port in a coming decade—that's how heavy the financial consequences have generally begun to weigh.

Therefore today's managers have begun to work with the outcome of scenarios for the future and econometric models in an effort to get a better insight into the commodity flows in the coming years. He tries to survey what will happen in shipbuilding and oceangoing shipping, what changes will take place in the way the most important commodity flows are offered; he must know the technical developments at transhipment companies, the problems around dangerous cargoes and the responsibilities of the port as regards the environment.

Topical lissues

Many large European ports are faced with the following practical and topical issues calling for adjustments:

- Interesting developmnts are taking place in the field of "physical distribution". Active stevedores are looking for possibilities to expand their services to clients by acting as an advance stock-keeping and forwarding post. Sometimes they are also engaged in simple processing. This often leads to changes in the use of terminals resulting in less bustle per square metre, but also in higher productivity per running metre on the quay; more freight is moved across the quay.
- Specialisation in transhipment activities aimed at raising productivity and achieving scale-advantages, also has consequences: sometimes this results in purchasing new (usually heavier) transhipment equipment requiring stronger quays.
- Concentration of similar activities may be sought for various reasons. The most obvious one is economical: it provides scale advantages and strengthens the competitive position. But other factors may also force the concentration of particular transhipment activities in one place: security or the environment. Examples of these are transhipments of LPG or other dangerous cargoes, and bulk cargoes including coal and tapioca; the latter produce a great deal of dust which cannot be suppressed entirely.
- It might be necessary to move particular port operations to open areas, away from urban districts. This may be necessary when inhabitants of nearby residential quarters complain of bad smells, dust noise or dense traffic. Purely operational considerations may also lead to removals: port industries bordering the city area may have become less easily accessible to heavy lorries, or they may have run short of accommodation as a result of which further expansion is no longer possible. After the second world war Rotterdam produced new opportunities by carrying out huge port projects west of the city.
- The developments in shipbuilding also called for this. The economic advantages of large vessels have led to a spectacular increase in ships' tonnages; the ports were confronted with problem of providing safe access for these very-deep-drawing ships.
- The following aspect is often neglected; the western countries with their highly-advanced industries are faced with growing reluctance to work round the clock (in shifts). Nevertheless it is desirable to make the expensive transhipment equipment operate more hours per day. Due to this development productivity per square metre of operating sites is less than the actual capacity. This means that the port industries need more sites than if the working days were extended by a few hours.
- Little has changed in the custom to build ships and lay out operating sites strictly according to the owners' views. Shipbuilders usually pay little attention to a port's potentialities. Sometimes this results in the arrival of a ro-ro vessel whose ramp is not geared to the landing stage. The port manager is then confronted with a construction problem. Consultations should be held at an earlier stage.

Another example is that of the car carriers with their high superstructures: they are strongly exposed to the wind, while their (usually) shallow draft makes them even more vulnerable. Additional manoeuvring gear could make them safer, but not all car vessels have this gear. This may give rise to problems in ports; for here the room for manoeuvring cannot possibly match the wideness of the seas.

Looking ahead!

All these facts, figures and events might lead time and again to a search for incidental solutions, ad hoc, for each case separately—but anyone trying this would run the risk of taking decisions which would after all prove to be less fortunate in the long term, Mr. Biesheuvel said.

With the aid of some slides he then discussed the management system developed in the past few years by the Port of Rotterdam, as explained elaborately in our magazine a few months ago. He stressed once more that these schemes should not be observed without criticism, but that their function still was to assist the manager in following a straight course in a bewildering multitude of circumstances.

A large port is a most complicated operational system which, in addition to an expensive infrastructure, has a great many active sub-systems: shipping, pilotage, tug assistance, transhipments, the storage of goods, ship-repairs, the traffic management system, the transport companies taking care of incoming and outgoing shipments, etc.

The port must be expected to react dynamically to changes in industrial patterns and transport techniques, but at the time its autonomous influence is limited by external technological, social or political factors. All these elements underline the necessity of a consistent policy.

Vital instrument

Mr. Biesheuvel concluded his paper with a discourse on

the question whether modern ports should be seen as a "profit centre" and the port managements as the producers of the profits.

The first requirement is for a port to make provisions enabling private companies to carry out their work. The first consideration of these companies is to make a healthy profit, allowing among other things for investments necessary for continuous renewal.

The port itself has a different task: it serves a purpose which does not differ essentially from that of the major transport routes to and from the hinterland: the shipping route, the railways and the motorways.

The port is in fact a product of world trade and it is this commerce it has to serve.

Doing this well will produce enormous social effects. If one knows that Rotterdam's share in Holland's gross national product amounts to between 10 and 20 per cent, it will be clear that the effects of a port which operates properly are very large indeed. Such a port is a vital instrument which stimulates activities far around it.

Ports which are aware of their responsibilities in this respect and which, therefore, opt for policy measures to stimulate the largest possible number of other activities, will aim primarily at balanced financial results; unlike private port operators, the port administrations see making financial profits only as a secondary goal.

Aid desirable

The economic significance of the seaports—regionally, nationally and in some cases also internationally—is generally acknowledged in Western Europe. Therefore most governments are willing to subsidise huge infrastructural projects, approach routes and connections with the hinterland. Only the Netherlands government is still rather reluctant in this respect.

Due to these divergent policies of a great many countries, the subsidy payments may also vary widely and thus lead to distorted competition, overcapacity and—in some cases—less commercial alertness.

Fortunately this does not apply to Rotterdam, for here the situation is precisely the reverse sometimes. On several occasions the port of Rotterdam has been forced to make investments in waters controlled by the central authorities. It is fully warranted to accuse these authorities of a lack of sufficient insight into the importance of international transport to the Netherlands.

There is no denying that somewhat more assistance of higher authorities would be justified. In this context Mr. Biesheuvel referred to drastic changes taking place in particular sectors of the port due to outside influences; he observed that these changes might have far-reaching consequences for employment in the port. The strong growth in the container sector caused problems in the general cargo sector; due to this development the port management was faced with costly restructuring programmes.

Financial government support would here, too, be fully warranted.

But subsidies producing surplus capacity and disturbing the market could never be justified, he said in conclusion. *(Rotterdam Europoort Delta)*

AAPMA 28th Conference

The 28th biennial Conference of the Association of Australian Port and Marine Authorities (AAPMA) held in Hobart 6-10 February 1983 was officially opened by His Excellency Sir James Plimsoll, Governor of Tasmania. Also attending the opening was the Lord Mayor of Hobart Ald. D.R. Plaister who extended a warm welcome to all delegates. Mr. A.S. Mayne, President of the AAPMA (Chairman, Port of Melbourne Authority) chaired the Conference. Host authority was the Marine Board of Hobart (Master Warden C.A. Risby).

Over 100 delegates including a dozen international representatives attended the Conference. The Australian delegates were from port and marine authorities of all States and the Northern Territory: the Commonwealth was represented by its Department of Transport and Construction. Overseas Visitors came from New Zealand, Papua New Guinea and New Caledonia.

Highlights of the Conference were the key-note address by Sir Raymond Ferrall on "Ports and the Community"; and two guest speaker/discussion group syndicate sessions.

A paper on World Trade and Protectionism by Mr. A.J. Tozzoli, Director of Port Department, Port Authority of New York and New Jersey was read at the Conference, when at the last moment, it was not possible for him to attend.

The first of the guest speakers/discussion sessions concerned the future of the Australian shipping industry and the Conference was fortunate having speakers: Sir John Crawford Chancellor ANU and the chairman of the Joint Committee of Shipowners and Maritime Unions 1980-1982; and Mr. N. Jenner Chairman, Australian National Line.

The second guest speakers/discussion session was on Rationalisation of Unions on the Waterfront. The authorative guest speakers were: Mr. C.H. Fitzgibbon General Secretary Waterside Workers Federation of Australia and Mr. M. Moore-Wilton, General Manager, Australian Wheat Board.

Mr. Mayne said that the wide range of subjects considered by the Conference together with the spirited discussions which followed were beneficial to the individual delegates and also to their authorities. in these time of great changes in ports. "Technology is changing rapidly in the port and marine field as in all modern fields of human endeavour. It is necessary to keep abreast of developments and increase skills to the maximum in order to ensure the proper development of Australian ports" he said. Mr. Mayne also stated he felt that the general public should be more aware of the role of Australian ports, and their importance to the economic prosperity of Australia. The ports are a vital link in the transport chain and the interface of cargo between land and sea carriers; efficient Australian ports are needed for a progressive Australia, whose economy is so dependent upon international trade.

The AAPMA has been successful in fostering uniformity in port and marine practice and the Association provides machinery for systematic mutual consultation and sharing of experiences and ideas. The AAPMA is devoted to consultation and deliberation, making recommendations only to its members. The Association has provided an important forum for discussion on matters of mutual concern and has assisted members in many technical aspects associated with shipping and cargo handling and port and marine administration.

Mr. Mayne said that the 28th Conference provided much

evidence of co-operation between port and marine authorities of all States and the Northern Territory, together with the relevant departments of the Commonwealth Government. He also spoke of the great value of international contact and said that the presence of overseas visitors, permitting a broader exchange of views, enhanced the Conference.

At the end of the Conference Mr. Mayne did not stand again for the position of President AAPMA. Mr. J.M. Wallace President Maritime Services Board of New South Wales and Mr. J.G. Griffith, Director-General of Marine and Harbors South Australia were elected President and Vice-President respectively, until the next biennial Conference (29th) of the Association of Australian Port and Marine Authorities, which is to be held in Adelaide 1984 hosted by the Department of Marine and Harbors South Australia.

On taking over as President Mr. Wallace thanked Mr. Mayne for the excellent work which he had done for the Association of Australian Port and Marine Authorities, during five years as President. Mr. Wallace said he was proud that the Association was in such fine shape and he would encourage continuance of policies similar to those established under Mr. Mayne's leadership.

SA Government places new shipping services on top priority list: Port of Adelaide

Renewed emphasis has been placed by the South Australian Government on the closing of the core shipping services ring as a top transport resources priority for 1983.

The Minister for Transport and Marine, Roy Abbott, said that, in particular, the State Government saw the introduction of a direct container shipping service with the State's major trading partner, Japan, as a key achievement in the immediate future.

On his return from negotiations with Japanese shipping line members of the Australian Northbound Shipping Conference in Tokyo last year, the Minister had said he expected the service to begin during the first half of 1983.

This followed recognition by the lines concerned, after five years protracted negotiation, that a direct ANSCON container service was justified on economic and all other relevant grounds.

Mr. Abbott said the Japanese lines, in consultation with ANSCON's other overseas and Australian members, had indicated that a firm response would be forthcoming within a general February deadline.

His understanding was that the response would follow the agreement on justification with details of when the direct service would begin.

Speaking to SPJ before its February printing deadline, the Minister said he couldn't be pinned down to anything firmer at that stage.

"We've been patient now for just on five years, during which time economic justification for a direct ANSCON service has always existed. My own view, and one shared by private enterprise members of the negotiating team which went to Tokyo, is that we have to be patient for just a little longer".

"Essentially, the basis on which all of our discussions have been based has remained intact, despite the downturn in world trade", Mr. Abbott added, "and the lines are well aware of the top economic priority the State Government places on completing the ring of essential direct shipping services. Given that we have achieved the Japan service, and that it begins in the first half of this year, we would expect to complete the round-up of services by adding the east coast of North America and a direct New Zealand service to the list in the near future".

"No, you can't pin me down on those dates either, but you can say that the government regards each as part of the top transport priority listing to which I've already referred", the Minister said.

"There isn't anybody in South Australian trade who is unaware of the potential contained in the new CER (Closer Economic Relations) agreement between Australia and New Zealand. It's been in effect now for a month and I know the Chamber of Commerce and Industry is anxious to assist its members to actively explore the market. Of course, that also applies to the SA Shipping User Group, in which the Chamber, the State Government and most major importers and exporters in the State are actively involved", Mr. Abbott said.

"Discussions are taking place in regard to New Zealand container shipping links with South Australia. No formal case has yet been presented, but you should be aware that detailed studies of our trade with NZ have been undertaken and there could be development in that area. More than that, I can't say, but it is not being neglected from the shipping point of view.

"As for the east coast of North America, and I mean both Canada and the United States, we know this trade is also economically sound on a direct basis and there are to be further moves in this direction".

Asked whether the Japanese lines may be taking too long to give the State Government a final response on the ANSCON service, the Minister said that nearly five years was a long time in the ordinary course of events.

"But we're not dealing here with a decision on whether to give commuters an extra bus service at peak time," he declared.

"The complexities of re-routing ships are many. In fact, we've discussed in great detail the logistics and costs of these factors, as well as varied arrangements necessary between conference member ANL and the Japanese, Korean and European members, so we appreciate the situation very fully. If I can, I'd like to make a special point here about the very real co-operation from the lines and I should mention the Australian National Line in particular".

The Minister said South Australia's transport future had never been brighter. There had been dramatic changes in recent years, since the mid 70s. The State Government regarded the sea-rail-road-air future as one of South Australia's key resource areas, equal in economic potential to any other form of resource, including oil, gas and minerals.

"Primarily, I'm talking about transport in its role as a trade and investment instrument. You've only got to think of the future benefits which will flow from the recent extension of the national standard gauge rail system to Adelaide, and of those stemming from the equally recent opening of the international air terminal. Together with shipping expansion and the long-delayed national highway upgrading".

"We've got a lot to thank the State Labor governments of the 70s for", Mr. Abbott said, "but I'd be churlish if I

didn't also commend the Tonkin Government for taking up where both Don Dunstan and Des Corcoran left off.

"That applies, in particular, to shipping, air transport and standard gauge rail, and I think the business community is aware that these are areas where State Governments of all political persuasions have been rock solidly behind private industry and commerce.

"There are many things we differ on, but I feel we do share common ground in that we want to see South Australia as a major freight hub for the whole of Australia. Link that with manufacturing and processing expansion and offshoot industries from mineral resource projects, plus the Port of Adelaide industrial estate development program and the government's continuing emphasis on hitech specialisation—there's no doubt we face a future many States envy", the Minister said.

Mr. Abbott said he hoped to meet the executive of the South Australian Shipping User Group for further talks in March. It was possible that ANSCON would be in touch with him before that meeting in regard to the Japan container service. *(South Australian Ports & Shipping Journal)*

Busan Container Terminal now doubles its capacity with new Pier No. 6

Port of Busan

With a fine natural harbor and excellent command of geographical conditions, the Port of Busan, at the southeastern part of the Korean peninsula (35°–06′–07″ N, 129°–04′–02″ E), is in its role as a gateway to the globe, indeed the most busiest and modernised international container handling port in Korea. In view of the container movements, the Port of Busan shares more than 90% of its nation-wide container traffic and ranks around thirteenth in the list of the world's busiest container ports.

In 1975, the recorded container traffic volume was 260,929 twenty-foot containers (TEU) which was increased up to 786,653 TEUs in 1982 showing a sharp increase of some 300% during the last seven years. To meet this challenge, Korea Maritime & Port Administration initiated a series of long-term port development projects and the 1st phase development project was successfully implemented during the period 1974 through 1978.

Pier No. 5 and new Pier No. 6

As the final stage of 1st phase development plan, an opening ceremony was held in Sep. 1978 for the new exclusive container terminal.

Thanks to a wide range of modern equipments, facilities and terminal operator's utmost endeavours, Busan Container Terminal (Pier 5) has recorded 19% annual throughput increase or exceed 418,000 TEUs in 1982, comparing with 264,300 TEUs in 1979 only 3 years ago. Today Busan Container Terminal serves over 39 different shipping lines or some 195 vessels, with links to the North and Southwest Pacific regions, European countries, Africa, Middle-East, Australia and Southeast Asia, apparently functioning' a key role in creating a containerisation era in our country. Busan Container Terminal Operation Co. (BCTOC) has been responsible for overall control and operation of this common user's terminal under the lease contract with the Port Authority ever-since the opening of the terminal. But that was only the beginning.

The steady increasing container traffic put spurs to 2nd phase port development projects. Pier 6 construction work has been ended (1979~1982). Busan container terminal is now pushing ahead with newly built Pier 6 container terminal. With the new berth, Busan container terminal boasts four berths totaling 1,262 meters in length, accommodating four 50,000 DWT class container ships simultaneously. Six 30.5 ton Gantry Cranes and two 40.6 ton Gantry Cranes are used along with 9 rubber-tyred Transfer Cranes in addition to 12 Straddle Carriers for container yard operation. A total of 300,826 m^2 Pier 6 terminal doubles the BCTOC's handling capacity and when fully operational will handle more than 720,000 containers annually. Repeatedly, we are pleased to inform you Busan container terminal doubles its capacity and container fleets are invited to call and enjoy better services.

8th APAA Meeting; Minister calls for fresh approach in self reliance

The eighth meeting of the Asean Port Authorities Association (APAA) was held in Kuala Lumpur from 1–4 November last.

In his keynote address at the opening ceremony, the Minister of Transport Dato Lee San Choon expressed confidence that the Association will be able to achieve its aims and objectives in further promoting the efficiency and service of the ports in the Asean region. This is important as shipping is an integral part of Asean's trading activities. However the Minister cautioned that expanding shipping tonnages and port capacity do not necessarily ensure the viability of investment in ships and ports, especially when the bulk of the Asean trade is presently carried by foreign owned ships. This, the Minister said, is further aggravated by the protectionist policies of the developed countries, where tariff barriers are established to restrict the inflow of goods. The Minister called on Asean countries to consolidate its position to obtain a greater share of its trade, both foreign and intra-regional. He expressed the need for APAA to be more self-reliant in its approach by placing less dependence on assistance from developed countries.

At the 4-day meeting, the APAA projects and activities were reviewed. Among other items discussed were the simplication of port documents, container terminal operations in Asean ports and port information exchange programmes. Five country papers were also presented during the meeting. These were "Stevedoring services–public or private control" by Thailand, "Computerisation of the container terminal" by Singapore, "Training needs for national requirements in relation to ports" by the Philippines, "Inter-island trade and passenger service" by Indonesia and "Security, health and safety at ports" by Malaysia. A total of 34 delegates from ports in the 5 Asean countries attended the 4-day conference. The leader of the Indonesian delegation was Mr. S.F. Makalew, the port administrator of Belawan, Col. E.S. Balig Jr, the general manager of the Philippine Ports Authority headed the Filipino delegation, while Mr. Goon Kok Loon, the deputy general manager of the Port of Singapore Authority led the delegation from Singapore, and Vice Admiral Kamnuan Punsri the delegation from Thailand. Mr. Lim Teik Chuan, the director

general of the Penang Port Commission headed the Malaysian port delegation.

The chairman of Asean Port Authorities Association for the 1982–1983 term is En. Mohd Hashi H. Abdullah, the director general of the Kelang Port Authority and the executive secretary is En. Mohamed b. Hj. Abdul Hamid.

The ninth meeting of APAA will be held in Singapore in 1983. *(WARTA Kelang Port)*

Information System to improve utilization of port data: Port of Kelang

The Kelang Port Authority has been chosen as a model for a pilot project sponsored by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP).

The project called PORTMIS is aimed at improving efficiency of ports through more effective presentation and utilization of information by management in countries under the ESCAP banner.

The idea of introducing PORTMIS (Port Management Information System) was initiated and discussed in Bangkok in 1976. Two years later the project was approved by ESCAP for further studies. The system was designed by experts from ESCAP and made available to ports in developing countries in the ESCAP region.

The objective of the PORTMIS project is to develop a system whereby information on any aspect of port operations and administration would be immediately available to management. The better flow of information would assist management in decision making and generally to operate more efficiently.

The expert from ESCCAP conducing the PORTMIS project is Mr. Brian Cousen, who is a chartered accountant by profession. Assisting him in the project are a team of officers from the accounts, engineering, personnel and R & D departments of the port. They are Cik Ng Lai Wah, Cik Chee Suat Chew, Mak Yoon Song, Ibrahim Ismail, Murhalim Osman, Subramaniam Samy Nair, Fadzil Hakim and Othman Hj. Rais. *(WARTA, Kelang Port)*

Record container throughput for New Zealand's largest terminal: Port of Auckland

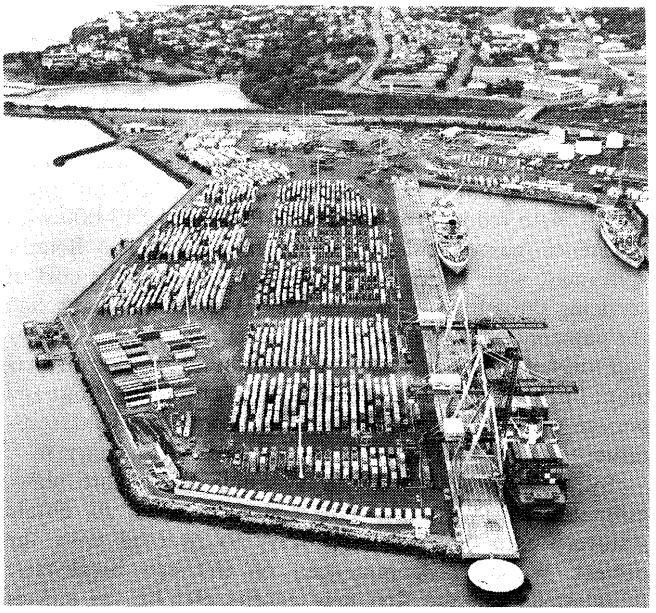
The Port of Auckland's Fergusson Container Terminal in 1982 became the first-ever terminal in New Zealand to reach a container handling rate of more than 100,000 TEUs a year.

Container throughput for the year ending 30 September 1982 was 101,642 boxes not including restows or shifts on board ship. The milestone was reached with a record number of 235 container ship calls during the year.

Trade was equally balanced between import and export boxes, and represented an 8.85% increase on the terminal's previous year of trade. The terminal now earns 59.37 per cent of Auckland's operating revenue.

Fergusson is by far the largest of New Zealand's four container terminals handling forty-one percent of the country's total containerisation trade.

The terminal has experienced rapid growth since it



opened in 1971 and its owner/operator, the Auckland Harbour Board, anticipates considerable further growth to reach the terminal's development capacity of handle 160,000 containers a year.

The terminal directly serves the northern half of New Zealand's North Island, the most industrialised region containing one-third of the country's total population of three million. Recent improvements to inland transport systems in New Zealand have further stimulated growth of trade to Fergusson from regions throughout the country.

Development plans at the terminal by the Auckland Harbour Board include providing an additional three-hectare stacking area to bring the total backup area to 26.3 hectares. Present storage space accommodates 5,000 containers including 1424 power outlets for refrigerated containers.

The terminal is served by three container cranes, two single-lift and one double-lift, backed by a fleet of straddle carriers and forklifts up to 20-tonne capacity.

Westhaven redevelopment: Auckland Harbour Board

In a brief and informal ceremony before a large gathering of marina and mooring licence-holders, the Auckland Harbour Board's redeveloped Westhaven Boatharbour was officially opened on 5 December last by the Minister of Transport, Mr. Gair.

With 1,109 marina berths and 361 swing and pile moorings the total number of boats accommodated at the boatharbour has increased by 750. Extensive ancillary facilities have also been provided.

The $9.7 million redevelopment was carried out by the Board largely on a user-pay basis, to meet an essential recreational need for Auckland.

As far back as the early 1970s the Board saw that additional moorings and marina berths were required to meet the demands of the growing population and increasing popularity of yachting and boating. Guidelines for redevelopment of Westhaven were announced in 1974, starting a process of planning and discussion by the Board in liaison with boating organisations.

After submissions from 29 organisations and wide-ranging discussions with other interested parties, the Board announced in 1978 a plan for Westhaven redevelopment. Further discussions were held because of the concern by boating representatives at the prepayments by boatowners required to finance the scheme. Under the initial system these payments ranged from $8,000 to $15,000, but these figures were reduced to between $4,500 and $13,000 with difference being made up by loan money. The Board's agreement with boating organisations was that the cost of servicing these loans would be met by boatowners through the payment of an annual fee.

Provision was also made for private enterprise involvement in the boatharbour so the capital cost of haul-out and storage activities would be met by commercial interests, rather than being a charge against all users of the marina.

By early 1979 the Board was able to prepare plans, estimates and carry out the necessary work to obtain statutory and financial approvals to proceed with the project. Work had commenced on the new breakwater foundations and the first new marine pier by the end of that year.

At the beginning of 1980 the Board began an exercise which was similar to a massive game of Chinese checkers. Boats on certain marina berths and swing and pile moorings had to be moved to allow for work to go ahead, with careful planning required to cause as little inconvenience to existing berth holders as possible. Almost 2,000 moves were required in the course of the development.

A major construction project in 1980 was the new breakwater running south from the eastern end of the existing east-west breakwater, increasing the amount of room for pile moorings. That year also saw the formation of retaining walls for the major southern reclamation from which the nine new marina piers were to extend.

Dredging to provide fill for the reclamation began in early 1981 and the whole area between the retaining walls was filled and levelled to provide vehicle parking space associated with the marinas alongside.

By the end of 1981 five new piers had been formed from the existing 10 piers built on the northern side of the reclamation. The first pier for the southern reclamation had also been positioned.

Other works included completion of the new fuel jetty off Beaumont Street, the electrical switching gear and substation buildings and a traffic roundabout installed at the busy Ponsonby Cruising Club intersection.

Construction work this year had substantially completed the project. The outer back up breakwater at Pier T, with its dinghy storage area, and the remaining piers have been completed.

An upgraded approach road from Poore Street has been provided and a number of service facilities such as parking and lighting completed. The trailer boat ramp at the eastern end of the boatharbour is due for completion in March 1983, the only substantial outstanding work at Westhaven after this year.

The caretaker's house at Westhaven was renovated this year to provide office accommodation for Auckland Harbour Board Boatharbours staff.

Landscaped areas have been grassed by planting of trees and shrubs has been left until next year's planting season to obtain the best results.

Berths and moorings at Westhaven have become progressively available to boatowners as facilities have been completed. All marina berths were fully occupied by the end of November and apart from minor work in the swing mooring area all 1,470 facilities for boats are now ready for occupancy.

New Cold Store nearing completion: Port of Jebel Ali

For the twelve months ended 30 September 1982, the Port of Bluff achieved an all time record in manifest tonnage.

At 1,252,816 tonnes, there was an increase of 185,293 tonnes over the corresponding period last year.

In announcing these figures, Chairman, Norman Armstrong, described the increase in tonnage as a "just reward" for the efforts of the General Manager and his team during the year.

Mr. Armstrong noted that the major components of the tonnage increase were increases in fertiliser imports, wood chip exports and New Zealand Aluminium Smelters Ltd products.

The record result for 1981/82 was a vindication of the Board's policy of diversifying into a multiplicity of cargo handling modes, the Board Chairman said.

"We have no intention of sitting on our laurels. We are going for a new record in the present financial year," Mr. Armstrong said.

The Port Authority of Jebel Ali have announced that their new Cold Store, currently nearing completion, will be fully operational early in May and available for the storage of frozen and chilled products.

Located only 30 m from the quayside and with a 42,000 cubic metre capacity, the store has eight separate rooms varying in size and in which the temperature can be separately controlled in the range of minus 29 degrees Centigrade to plus 13 degrees Centigrade.

The refrigeration Machinery is the most modern currently available in the world and is installed to the highest standards, including emergency standby generators. Cargo Handling Equipment includes six electric fork lift trucks and twelve Atlet trucks and lifters. Five thousand pallet converters will be available for rapid transit of cargo from vessels direct to the Cold Store.

CORRECTION

On page 22 of the March 1983 issue of this journal, Wellington Harbour was erroneously printed as Wellington "Harour". The Head Office apologizes for the error.

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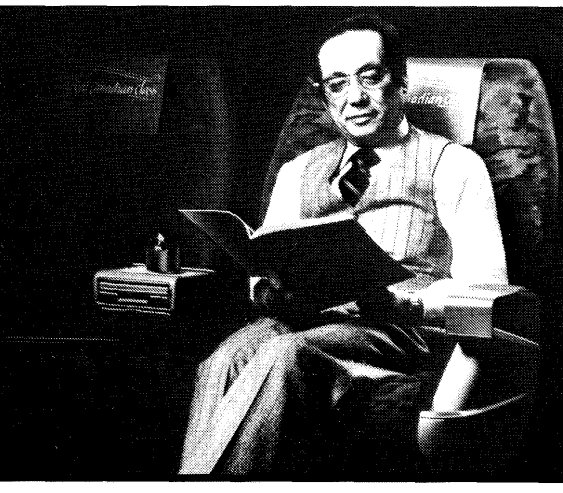

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