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Port of Rijeka, Yugoslavia

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PORTS and HARBORS

Forum on Port Problems:

The Canadian Land-Bridge

Container Traffic Between Europe and East Asia Revolution or Utopia?

By Mr. H. A. MANN

Chairman of the National Harbours Board of Canada

At the International Container Conference Hamburg E. V. October 2-7, 1968

It is a distinct pleasure to be able to be here in Hamburg on the occasion of the First International Exhibition of Container and Combined Traffic in the Federal Republic of Germany. We know very well the interest which is being shown in German traffic and shipping circles in the development of container traffic and we are familiar with some of the work in this regard which is being done in your country. The opportunity of gaining first-hand knowledge of this work is indeed a most useful one.

Before I venture into the challenging subject which has been assigned to me, I want to congratulate the organizers of this International Container Conference which is being held in connection with the International Exhibition. One cannot but be impressed with the range of topics which have been planned for this Conference and which, indeed, cover the current spectrum of the container revolution. It is a privilege to have been asked to talk about part of this wide spectrum and I hope that the modest contribution in this paper will be found to be of some use.

The subject on which I have been asked to speak is "The Canadian Land-bridge. Container traffic between Europe and East Asia. Revolution or Utopia?" The very fact that land-bridge concepts-and the Canadian land-bridge is only one of several-are being seriously considered is in itself an indicator of a new spirit in the transportation industry. For only too long have all of us in this industry been content to work within historically established frameworks and to direct our attention chiefly to improving our methods of operation within those frameworks. This is no longer the case. The pace of technological innovation in the transportation industry generally has been quickening. This quickened pace has affected all media of transportation and transportation by water is certainly no exception. In a large measure this speed-up in technological innovation was caused by the pressure of costs on revenues and profits and by the increased realization that the efficiency of distribution has not kept pace with the efficiency of production.

In our industry this has led to larger ships, particularly in the bulk trades, to efforts to increase the speed of vessels, to automation of vessel operation and, on the port side, to a search for a way of cutting costs by unitizing cargo. The emergence of the container and its widespread acceptance is a vivid



Mr. Howard A. Mann

demonstration of this trend.

It is only natural that in this reexamination of traditional methods of doing things attention should be focused on an examination of whether time-honoured distribution routes can be changed. The object of such a change would, of course, be to increase the efficiency of such routes and the measurement of such efficiency is the time/cost factor. The idea of a landbridge to connect Europe with East Asia must be viewed against this background mainly.

However, one should be modest and put this idea into a historical perspective. The dream of improving the route between Europe and East Asia, after all, led to the adventure of Christopher Columbus and the incidental discovery (or rediscovery) of the North American continent. The French have a saying which, I would think, is rather appropriate: "Plus ça change, plus c'est la meme chose".

An early forerunner of the landbridge was a fast transportation system which, perhaps, might be considered a partial land-bridge. In citing it here I hope that you will forgive me for exhibiting some pride in an early Canadian achievement

in this field. The story is that of the so-called silk trains. Some fifty years have gone by since the days when these trains were the fastest vehicles on wheels. Records show that silk, both raw and manufactured, was moved by ship from the Orient to Vancouver by way of Canadian Pacific as early as 1898. Transferred to express trains at the Canadian West Coast, these trains set speed records as each cargo, valued upward of \$3 million, was shipped to New York and other U.S. points. The movement came to an end in the 1930's when synthetic fibres, along with competition in transportation, lessened the demand for these silk movements. Let me quote from an article which describes the movement: "In 1890 Canadian Pacific officials saw a future in the silk trade and ordered three ships to supply the North American market. The Empresses of China, Japan and India-six thousand-ton white vessels with twin screws-were the largest and fastest afloat on the Pacific. The Empress of Japan completed one voyage from Yokohama to Victoria, British Columbia, in the then sensational time of 10 days and 10 hours. The average run of the Empresses was a week better than their nearest rivals.

In 1913 the C.P. put the Empress of Russia into service. It startled the shipping world by making the Pacific run in 8 days, 18 hours and 23 minutes. In 1924 the Empress of Canada covered the 4,200 miles in 8 days, 10 hours and 9 minutes. The records set for the fastest transport of cargo over water, then became a challenge for faster shipping overland. American Railways found themselves unable to compete with Canadian Pacific trains as silk cargoes were delivered in New York 13 days after leaving Japan.

Why all the speed? Owing to the value of the raw silk—some cargoes were valued as high as \$10 million—and the rate of insurance, both the steamship and railway were anxious to get cargoes off their hands as quickly as possible. The silk was insured on an hourly basis and the less time it spent in transit, the less it cost the shippers. It deteriorates if not kept dry and being sold on a market where prices were subject to change, speed was mandatory from the moment bales were stowed aboard ship in the Orient to the time they were unloaded at mills in the United States. The silks had specially designed railway cars, lined with varnish wood, sheathed in paper, air-tight and sealed so that neither moisture nor thieves could get at the cargo. The trains had only the crew and guards as passengers. After a train of about 9 to 15 cars was loaded at Vancouver, every trip to the East was an attempt to beat the speed held by other silk trains. The trains had priority over everything else on rails."

There are a number of lessons in this early high-speed quasi-landbridge across Canada which have a bearing on today's or tomorrow's situation. What are these lessons? The first, a high degree of integration was possible because the steamships and the railway were closely co-ordinated. Secondly, the railway part of the movement could, in Canada, be carried out by one Trans-Continental line, thus avoiding interchange delays between railway lines. Thirdly, there was an economic incentive for the movement because of the nature and value of the commodity transported. All these factors are of significance in any d[:]scussion of the land-bridge concept and I shall return to them later in this paper.

Some years ago a Canadian author by the name of Bruce Hutchison wrote a book about Canada and its people. He called it "The Unknown Country". While we have become much better known since those days, it would be unreasonable to assume a specific knowledge among most people of the transportation, the legislative and the administrative setting in which a Canadian land-bridge would operate. I would like to take a few minutes, therefore, to sketch out the main features of this setting and I hope that those who know Canada well will bear with me while I do so.

First, let me place the concept of a land-bridge between Europe and East Asia into its physical setting in Canada.

The physical concept of Canada

is not an easy one to imagine for an European. There are about 20 million of us living in a country which is really a continent. Settlement is chiefly along a fairly narrow ribbon close to the American border. Over 4 thousand miles (about 6,500 kilometers) separate Canada's most easterly city of St. John's in Newfoundland from Vancouver Island on the Pacific Coast. Approximately 3 thousand miles (4,800 kilometres) lie between Ellesmere Island on the Arctic Ocean and our most southerly point. Our coast line is probably one of the longest in the world. Excluding our islands, it ranges over 17,860 miles (28,760 kilometers). In terms of land area Canada is 40 times the size of the Federal Republic.

The physiographic and population characteristics of Canada present unusual difficulties from the standpoint of transportation. Quite apart from the distances to be traversed by transport routes, the main topographic barriers run in a North-South direction so that sections of the country are separated from each other by such water barriers as Cabot Strait and the Strait of Belle Isle dividing the Island of Newfoundland from the mainland; by rocky forest terrain such as the New Brunswick-Quebec border region and the areas north of Lakes Huron and Superior dividing the industrial regions of Ontario and Quebec from the agricultural areas of the Prairie Provinces; and by the mountain barriers between the Prairies and the Pacific Coast.

It is obvious that under these geographic conditions transportation is vital for Canada. In fact, the nation really came into being because of the extension of efficient transport links across the Continent. Tremendous efforts have had to be devoted to making our transport network efficient and it has been necessary both for the public and the private sector to invest heavily in all fields of transportation.

As a result we have today a highly sophisticated transportation environment in Canada. While there are a number of small railways mostly in the nature of feeder lines, the vast preponderance of rail movements are carried out by two giant railway systems. One of these, Canadian National, is owned by Canada; the other, Canadian Pacific, is privately held. The Trans-Canada across Highway stretches the breadth of the nation. It is a paved all-weather route binding the Eastern and the Western extremities of the country together and being connected to a modern highway system within the various regions of Canada. Two major Trans-Continental and International Airlines are supplemented by Regional airlines and their frequent services have helped to shrink to relative insignificance the vast distances of Canada's continental land mass. Water transport has always played an important role in our history. Indeed, the exploration of Canada proceeded essentially along the river and lake routes. The St. Lawrence Seaway and the large port installations at the Atlantic and the Pacific Coasts as well as the Port of Churchill in the sub-Arctic are concrete evidence of the vital role of water transport in the economy of the country.

In its relatively short history then, Canada has built up a highly complex, modern transport network which has been able to overcome problems of distance, natural barriers and population dispersal. This network has also been able to ignore virtually all problems of a climate which we share, at least in our major settlement areas, with the northern parts of the United States.

So much then for the physical setting in which a Canadian landbridge must operate. Let me now briefly talk about the two major Canadian components of such a land-bridge, namely, the railways and the ports.

As mentioned earlier, the vast preponderance of Canada's rail transportation is carried on by only two railways. This is in marked difference to the United States where, despite mergers which are increasingly taking place, there are no truly Trans-Continnental railway companies. Both Canadian National and Canadian Pacific have, in addition to their Trans-Continental lines, a network of lines which connect the principal settlement areas of the country and both railways have subsidiaries in the United States. The extent of their coverage of Canada and part of the United States can easily be seen from the figures on trackage operated by them which are for Canadian National almost 35,000 miles (51,315 kilometres) and for Canadian Pacific approximately 16,641 miles (26,-777 kilometres).

Both lines are, of course, fully dieselized and both possess a large fleet of specialized railway cars built to serve specifically some of the major commodities they carry. The use of computers is widespread in both companies and has contributed significantly to the speed and efficiency of railway operations in Canada.

In addition to their rail services, Canadian National and Canadian Pacific have extensive holdings in highway trucking lines and are, therefore, capable of providing a closely integrated service. In the case of Canadian Pacific, the Company owns ships and has just announced a container service between Europe and Canada which will integrate both means of transport.

While one can, of course, speak at length about the rail services of Canada, the purpose of these brief remarks is to give a short sketch of them only to the extent of showing what can be offered by the railway segment of a Canadian landbridge.

Let me now move to the other segment—the ports of Canada.

I mentioned earlier in this paper that Canada has one of the longest coastlines in the world. It is not surprising, therefore, that the country has developed a great number of harbours over the years. These range from world harbours of great size and complexity to small ports of local importance mainly. Although, basically all these ports (with only a few exceptions) are under the control of the Minister of Transport, the method of their administration and the ways in which they are operated vary considerably. We are currently reexamining our port policy with a view to improving it.

Nine of the principal harbours in Canada are administered by the National Harbours Board, a Government Corporation, while eleven other major ports are administered by local Harbour Commissions which include municipal as well as federal appointees. In addition there are about three hundred public harbours under the direct supervision of the Department of Transport.

Quite obviously, only are a few of these many ports of varying size and importance would come into a discussion of a land-bridge.

Among the principal locations which have been mentioned as termini for such a land-bridge in Canada are the Strait of Canso, Halifax, Saint John, Quebec and Montreal in the eastern part of Canada and Vancouver on the Pacific Coast.

How does each of these ports fit into a landbridge scheme? Criteria which will be mentioned in this context are (a) depth of water; (b) year round accessibility; (c) availability of areas for container terminals; (d) availability of inland transport links.

A site at the Strait of Canso which divides Cape Breton Island from the Nova Scotia mainland has been proposed as a container terminal. At the present time no land area exists for the accommodation of such a terminal. Very deep water is available for vessels. The area under consideration is ice-free the year round and is connected to Canadian National Railway.

The Port of Halifax is one of Canada's major Atlantic ports. It handled over 9.3 million tons in 1967 and is approached directly from the Ocean by a Channel with a minimum of 50 feet (15.24 metres) at low tide. Currently under construction by the National Harbours Board is a new pier suitable for container operations which will have approximately 55 acres (22.26 hectares-222,574 square metres). Depth at this facility will be 45 feet (13.72 metres) at low tide and the area will be completed by 1970. Halifax is a completely ice-free harbour and land-bridge traffic would be moved by Canadian National. The ocean distances between European ports and Halifax and its rail distances to Vancouver will be found elsewhere in this paper.

The Port of Saint John is another of our major Atlantic harbours. Its cargo tonnage in 1967 was close to 6 million. It is accessible to the sea by a main channel with a minimum of 30 feet (9.14 metres) at low tide and is served both by Canadian Pacific and Canadian National Railways. The Port has an area suitable for a container terminal which consists of 20 acres (8.09 hectares) and depth at berth is 32 feet (9.75 metres). Like Halifax, the Port of Saint John is completely ice-free. Ocean and rail distances of relevance to the land-bridge concept will be cited later.

The Port of Quebec, about 160 miles (257 kilometres) below Montreal on the St. Lawrence River handled over 7 million tons in 1967. It is opened to all ocean navigation for 9 months and can be reached in the winter months by ships with ice-strengthening. An area suitable for container operations is available and announcement of a container service between Europe and Quebec has just been made by Canadian Pacific Steamships. The Service will begin in 1969. The Port is served both by Canadian Pacific and Canadian National Railways. As mentioned earlier, rail and ocean distances of significance to the landbridge concept will be detailed later.

The Port of Montreal on the St. Lawrence River lies approximately 1,000 miles (1,609 kilometeres) inland from the Atlantic Coast. It is accessible by a channel with a minimum depth of 35 feet (10.66 metres). It is opened to winter navigation for vessels with icestrengthening. The Harbour, one of Canada's largest, handled nearly 21 million tons in 1967. It is the location of Canada's first container terminal serving the European trade. The Port is connected to both Canadian National and Canadian Pacific main lines by the National Harbours Board Railway. Relevant ocean and rail distances will be given later.

At the Pacific Coast, the Port of Vancouver is Canada's major harbour. It handled over 23 million tons in 1967. The Burrard Inlet part of the Harbour, has an entrance channel of 39 feet (11.88 metres) and a new Outer Harbour is currently under construction at Roberts Bank. The first facility of this new

project will be in operation by the end of 1969 and the minimum berthing depth will be 65 feet (19.81 metres). The Port is ice-free. It has a number of areas suitable for container terminals and is already the Port for a container service to the Yukon in Canada's North. The Port of Vancouver is on the main lines of both Canadian National and Canadian Pacific Railways. Ocean distances between Vancouver and the Far East and rail distances to Canadian Eastern Ports will be found elsewhere in this paper.

Having sketched out, admittedly superficially, the physical and transportation settings in which a Canadian land-bridge would operate, a few words should be said about the legislative or regulatory setting.

A radical break with tradition took place in February 1967 when the Canadian Parliament passed the National Transportation Act. Based on the findings of a Royal Commission, this Act recognizes the importance of allowing competitive forces in transportation the fullest possible play so as to achieve a system of low cost, efficient transportation for the nation. The new Act, administered by a body responsible for the regulation of rail, air, interprovincial highway carriers, as well as solid pipelines and some inland water carriers, considerably reduces the regulations under which the railways have had to work before. It is of importance in a discussion of a Canadian land-bridge concept because it allows the Canadian Railways considerably more freedom in pricing than is available to their United States competitors under American regulations. Already there are indications that the Canadian Railways are making use of their new freedom and it will be interesting to see whether and to what extent they are prepared to apply elasticity to the growing container traffic. Both railways have said that they are eager to participate in this traffic and the moves so far made by them are promising.

It would seem reasonable to assume that the Canadian rail carriers, having already the advantage of integrated Trans-Continental services and now being free to price their services with a minimum of regulation, should be able to compete extremely successfully with United States rail lines.

Canada, contrary to its neighbour to the South, has never attempted governmental supervision over ocean steamship rates and is competitive with United States ports in the costs of its ports services. Canadian Customs have demonstrated their awareness of the importance of container traffic by adopting a very progressive attitude towards the clearance of containers.

Having come to this point, it might be well to step back a little so as to gain a better perspective of the land-bridge idea. At the outset of this paper I mentioned that the pace of technical innovation in transportation has been quickened by the pressure of costs on revenues and profits and by the increased realization that the efficiency of distribution has not kept pace with the efficiency of production.

To this must now be added another factor, namely, the greater sophistication of people in their demand for goods and services which is a buy-product of a rising living standard. In terms of communication by voice and picture, in terms of the transport of persons, the world of today has shrunk. The concept of the "Global Village" popularized by the expatriate Canadian thinker Marshall McLuhan seems to be very much a reality. It is only natural that people in this "Global Village" want a distribution service for commodities which is of a standard at least similar to the standard now set for communication and personal travel. What this means is that if I in Canada want to buy a green Volkswagen with a yellow roof and purple upholstery, I do not want to be told by the dealer that it will take three months to get it in from Wolfsburg. I want it much sooner. There is no reason to believe that you in Germany or a purchaser in Japan will take a different attitude. Distribution channels will simply have to be opened up which can satisfy this more sophisticated consumer demand.

Fortunately, we are increasingly placing ourselves in a position

where we can do that. The speed of carriers by air, water and land has been getting much better and the technique of unitizing or containerizing commodities has been of great help in the improvement of physical distribution methods. Both these developments have allowed us to think in terms of automating the transport industry to a degree not possible before.

It is precisely this search for better distribution techniques which now forces us to re-appraise the efficacy of traditional trade routes. The land-bridge concept is a direct product of this search.

The two principal planks of the landbridge proposition are:-

- 1) unit trains can be competitive with container ships in some situations;
- 2) time is money;

To those of us brought up in the traditional belief that water provides the cheapest mode of transportation, it is somewhat difficult to adjust to the prospect of rail being competitive with water. Spurred by the onslaught of highway competition since the 1940's railways in all industrialized countries have responded to the challenge with initiative and imagination. Innovation and technological advances have been the order of the day. In some countries (such as Canada) the regulatory framework evolved during the late 19th and early 20th centuries is being dismantled to make way for an environment in which railways are able to exploit their inherent advantages over other modes of transportation.

An illustration of technical advances in the railroad industry is provided by the following excerpt from the Wall Street Journal of September 12, 1968. "New locomotives expected to reach the market in two years are exciting railroads. The 'third generation' of all rail diesel engines will be rated at 4,200 to 5,000 horsepower, up from the now typical 3,600 horsepower engine and the 1,000 to 3,325 horsepower of diesel of the late 1940's. Each new and more powerful line of locomotives has enabled the railroads to get along with fewer. Two of the current models replaced five earlier ones when the current ones

were introduced in 1965. Makers figure that each of the third generation will be able to do the job of two in-service engines. Dollar savings from the new models, estimated at \$25 million a year, come about because the engines can haul more cars at less cost a car for maintenance, labour and fuel. Engineers figure they are nearing the theoretical maximum of 6,000 horsepower for an efficient rail diesel."

The foregoing is cited simply as an illustration of the break-through in railway costs: the break-through of course is not confined to motive power. It is apparent in the diminishing importance of the ubiquitous all-purpose boxcar and its replacement by specialized equipment designed for specific needs: it is apparent in the handling savings attributable to containers. Perhaps of greater significance than any of the foregoing developments are the opportunities created by electronics, computers and communication systems, to optimise the use of railway rolling stock. Potential cost savings are enormous. In a recent paper dealing with automation of railroad operations, Mr. C. D. Howell, Vice President and General Manager of Westinghouse Air Brake Company made the following comment (with reference to the U.S.) "For every 24 hours the average loaded car is in a train producing revenue ton miles, it travels empty another 20 hours, resides in customers' sidings another 3 days, and rests in yards and interchange for 15 days.

"If it were possible to reduce yard days per revenue load by only one day, this would free about 75,000 cars on Class 1 railroads which on the same ratio could haul another $100\ 000.000$ ton miles per day. Or the railroads could scrap the same number of their oldest cars and rip up 700~800 miles of storage track equivalent to several hundred small yards, at savings approaching \$50 million per year in interest and depreciation."

One method now being applied to reducing the number of wasted rail car days in terminal yards is an electronically-operated, computercontrolled freight classification system. Another solution is the unit train.

A unit train consists of permanently coupled cars and engines operating as a unit providing a regular shuttle service between fixed points. Switching, classification, train make up and other terminal activities associated with conventional freight train operation are avoided and the fifteen lost days referred to in the preceeding quotation are eliminated. The consequence is that transit times are sharply reduced, equipment utilization radically improved and the railways are enabled to provide improved service at lower costs.

Unit trains are currently operating in several locations as vehicles for bulk commodities. Characteristically they are operating on routes where large tonnages of homogeneous bulk commodities have to be transported on a regular basis.

It is evident that the very high level of equipment utilization attainable with the unit train concept has engendered considerable interest in applying similar principles to the transportation of general freight. For example, with their "freightliner" system, British Railways have already introduced the unit train concept to the movement of general freight. Both of Canada's national railway systems are actively interested in application of the unit train concept to the carriage of containerized goods.

Given the developments outlined in the preceeding paragraphs the proposition that rail transportation can be competitive with water in certain circumstances is evidently tenable.

What the foregoing says in essence is that developments now occuring which will reduce rail transportation costs create a climate favourable to the inauguration of a landbridge service.

It is difficult for a railwayman to speak with precision on the question of railway costs: it is well-high impossible for me as an outsider. Railway costing is a complex and contentious subject. (To elucidate this problem the Canadian Transport Commission is presently engaged in hearings to develop acceptable costing formulas). Under the circumstances it is hardly surprising that railways give the appearance of being secretive when pressed for cost data.

Having said the foregoing I turn with some diffidence to a brief examination of the cost advantages of rail versus sea which support the landbridge concept. Using published data to illustrate the point I have referred to "Containerization the key to low cost transport" prepared by McKinsey and Co. Inc. for the British Transport Docks Board. In quoting from this document I should state that I am not unmindful of the fact that while the style and format of the report have received general acclaim the same cannot be said for all of its analysis and conclusions.

Using as a vardstick U.K. rail costs developed in the study (said to be somewhat higher than costs based on published U.S. data) and assuming balanced loads in each direction, the Report shows unit train costs to be competitive with sea costs over equal distances in the following circumstances: rail costs are always below those of ships with a capacity of 600 containers or less: up to 3,300 miles rail costs are below those of ships with a capacity of 1,200 containers or less: up to 1.900 miles rail costs are below those of ships with a capacity of 2,400 containers or less: up to 1,300 miles rail costs are below those of ships with a capacity of 4,800 containers or less.

It would be misleading if I were to suggest that the figures quoted were evidence enough of the viability of a landbridge for trade between Europe and the Far East. Clearly, long accepted notions of the competitiveness of different modes of transport may have to be discarded. We live in an age when such startling changes are occurring that we have become more receptive to new ideas: the cost studies which have already taken place confirm that further in-depth analysis of all the complex interrelationships of the landbridge concept may well be rewarded by evidence to support inauguration of a landbridge which will provide lower transportation costs than conventional routes between Europe and the Far East.

Apart from the relative cost ad-

vantages of rail over water, about which, as you can see, I am loath to be dogmatic: the landbridge concept is attractive from the standpoint of reduced cargo—in transit time.

As can be seen from the attached table (1) the Canadian landbridge route from Europe to the Orient (as represented by Hamburg and Yokohama) gives a distance saving of about 2,000 miles and more depending on the route selected.

What this distance advantage represents in terms of time savings depends, of course, on the assumptions made about vessel speed, rail speeds intermodal transfer time, etc. For this purpose let us assume average vessel service speed of 22 knots and average rail speeds of 40 m.p.h. In addition let us assume an added day in the case of the sea route, for Suez or Panama Canal transit time: for the landbridge an extra 3 days are added for intermodal transfer at Canadian ports. With these assumptions the sea voyage would require approximately 26 days compared with approximately 21 for the landbridge—a reduction of the time merchandise spends in the pipeline between Europe and Japan of about five days. Various reports have suggested a transit time saving of about ten days based on an allowance of 25 days or less for the landbridge route compared with 32 to 35 days current liner service travel time between Japan and Europe via Panama.

Apart from improved service to customers, reduced transit time represents cost savings in respect of insurance and the cost of capital tied up in merchandise in the pipeline. The significance of such savings depends on the value of the commodities being traded and on such factors as the seasonality of production or consumption, production programmes, arrangements for payment etc. Without very thorough analysis it is impossible to estimate the magnitude of time/cost savings. The rapid growth of air freight bears witness to the fact that time is often a more significant cost than the freight rate itself.

Taking the rate of interest on

capital tied up in goods in transit at 8% the savings arising from five to ten days reduced transit time would be from \$100,000 to \$200,000 for every \$100 million worth of merchandise in the pipeline.

I should like to conclude this section in which I have referred very briefly and somewhat tentatively to some of the arguments lending evidence to the landbridge proposition by suggesting to you that if there is to be a North American landbridge, geography favours Canada.

This is illustrated by the attached distance, table (2). The first fact to observe is that all of Canada's major east coast ports are closer to Hamburg and other European ports than is New York. For the Pacific leg of the sea voyage, Vancouver is closer to Japan (Yokohama) than are San Francisco or Seattle. There is a total distance advantage of about 600 miles via the shortest Canadian route as compared with the shortest route via New York through the United States. The Canadian ports which offer the least advantage in terms of total distance offer more scope for greater reductions in transit time by reason of the longer rail hauls.

Finally, while on the subject of distance advantages a brief examination of a landbridge linking the Western side of the North American continent with Europe is in order. Again using Hamburg as a basis for comparison, it is to be noted that the sea distance to San Francisco is 8,350 nautical miles while that to Vancouver is 9,137, tables (3) (4). Landbridge distances to San Francisco via Canadian ports range from less than 6,300 miles at best to less than 6,800 miles at worst. The distance via New York is rather more than 6,800 miles. Once again by reason of the shorter sea voyage and longer rail haul potential time savings are more favourable on the Canadian route. Distance advantages are even more significant for a landbridge to Vancouver based on an East Coast Canadian port rather than New York.

It is conceivable then that, because of the continuously growing Table 1

DISTANCE COMPARISON-HAMBURG TO YOKOHAMA

(Direct Sea Versus Landbridge)

Nautical	Miles

			Nautical Miles		Kilometers
Sea	Hamburg to	Yokohama			
· · · · · · · · · · · · · · · · · · ·	via	Suez	13, 184		24, 430
	via	Panama	12, 784		23, 694
			Nautical And Land Miles	Nautical And Kilometers	Kilometers
Landbridge	via	Halifax, Vancouver	10, 835	13,058	19, 186
		Saint John, Vancouver	10, 784	12, 822	19, 166
		Quebec, Vancouver	10, 357	12, 207	18, 449
		Montreal, Vancouver	10, 336	12, 089	1, 8450

Nautical Mile=6080 ft., Land Mile=5280 ft., 1 Nautical Mile=1,853 Kilometers, 1 Land Mile=1.609 kilometers.

CANADIAN VS. U.S. LANDBRIDGE

HAMBURG TO YOKOHAMA VIA: —							
	CANAI	DIAN LANDBE	RIDGE	U.S	U.S. LANDBRIDGE		
	Halifax Vancouver	Saint John Vancouver	Quebec Vancouver	Montreal Vancouver	New York Seattle	New York San Francisco/ Oakland	
AtlanticKilometers	5, 416	5,885	5,664	5,992	6,719	6, 719	
-Nautical Miles	2,923	3, 176	3,057	3, 196	3,626	3, 626	
Continent —Kilometers	5,873	5, 384	4,888	4,631	4,670	5, 149	
Rail Miles	3,650	3, 346	3,038	2,878	2, 919	3, 200	
Pacific —Kilometers	7,897	7,897	7,897	7,897	8, 162	8,405	
-Nautical Miles	4,262	4,262	4,262	4,262	4,405	4, 536	
TOTAL KILOMETERS	19, 186	19, 116	18, 449	18, 450	19, 551	20, 273	
TOTAL NAUTICAL AND RAIL MILES	10, 835	10,784	10, 347	10, 336	10,950	11, 362	
TOTAL NAUTICAL AND KILOMETERS	13,058	12, 822	12, 107	12,089	12,701	13, 311	

NOTE: Sea distances are the shortest navigable distances between the ports named: during winter months and unfavourable weather conditions actual distances may be greater.

number of container vessels (200 of these are expected to be in service by 1970) and the attendant greater pressure for their optimum use, we may get a re-examination of the traditional patterns of serving the North American Continent. This re-examination would be along the lines of routing containerized traffic from Europe to the entire North American Continent via an Eastern North American Port and then by rail to destination (and the reverse, of course, for all North American traffic to Europe). Similarly, containerized traffic from the Far East and destined anywhere on the North American Continent would move via a Pacific Coast Port and then by rail (against with the reverse being true for traffic from North America to the Orient).

Such a movement would, while not a complete landbridge, be based on the same underlying principle as that of the land-bridge. We might think of it in terms of a quasi-landbridge. It would, on the Japan to Eastern United States link, be a repeat of the silk trains which I mentioned at the outset of this paper and which, in the 1920's, were able to deliver cargo from Yokohama to New York City via Vancouver in thirteen days. As stated earlier, a Canadian port-rail combination would offer advantages over the corresponding U.S. combinations in many cases.

Insofar as land-bridge and quasilandbridge traffic moves entirely over Canadian rails, there is another point which should be made. For movements of this type the rates are quoted in Canadian dollars which are approximately $7\frac{1}{4}\%$ lower than United States dollars. On the declared intention of the Canadian railways to meet United States rail rates in Canadian dollars, this differential between the values of the two currencies favours a trans-Canada routing.

I have purposely avoided a discuss on of the volume of traffic which might be expected to move over a land-bridge between the Far East and Europe. We do not think that enough definitive work has been done on this to allow more than a speculative approach. On that basis-and with considerable diffidence-I would be prepared to quote one estimate made in Canada which sets that volume at anywhere from 30,000 to 70,000 20-foot containers from Japan to Europe per year and approximately one-third of that volume moving in the opposite direction. It seems that more analysis is necessary in this area.

It would be advisable at this stage to be aware of some of the problems with regard to the land-bridge concept. These problems are common to both the United States and the Canadian land-bridge variant. Apart from the obvious difficulties (which can be overcome in time) of settling the complexities of the ownership of containers and their interchange in global service and the rigidities of traditional transport systems faced with a challenge to unamortized investment, there are other hurdles to overcome.

Without assigning any order of importance to these hurdles or laying claim to having identified them all, they might be enumerated as follows: (1) The U.S.S.R. landbridge

Table 2

Τ	able	3

COMPARISON OF SEA DISTANCE AND LANDBRIDGE DISTANCES HAMBURG TO SAN FRANCISCO/OAKLAND

		Nautical Miles		Kilometers
Sea	Hamburg to San Francisco/Oakland	8, 350		15, 473
		Nautical and Rail Miles	Nautical Miles and Kilometers	Kilometers
Canadian Landbridge	e via Halifax	6,760	9,097	11, 590
	Saint John	6,722	8, 882	11, 591
	Quebec	6, 295	8,267	10,874
	Montreal	6,274	8,149	10, 875
U.S. Landbridge	via New York	6, 826	8,775	11,868

Table 4

COMPARISON OF SEA DISTANCE AND LANDBRIDGE DISTANCES HAMBURG TO VANCOUVER

		Nautical Miles		Kilometers
Sea	Hamburg to Vancouver	9, 137		16,931
		Nautical and Rail Miles	Nautical Miles and Kilometers	Kilometers
Canadian Landbridg	ge via Halifax	6, 573	8,796	11,289
	Saint John	6,522	8,560	11,269
	Quebec	6,095	7,945	10, 552
	Montreal	6,074	7,827	10, 553
U.S. Landbridge	via New York	6, 881	8, 863	11,956

concept; (2) Japanese shipping goals; (3) Air cargo capacity.

On the theoretical premises of the land-bridge concept, i.e. the assumption that under certain conditions rail transport can be competitive with containerships and that time is money, a Russian land-bridge between Europe and the Far East has advantages over both the two North American variants. Already shipments have been made from Germany to Japan via the Soviet route which offers, indeed, the shortest combination of rail and sea distances. Since this Conference will have the privilege of hearing a paper on the Russian land-bridge, it would be proper to assess the possibilities of that variant in the light of the information presented.

Of considerable importance for a development of both the Canadian and the United States variants of the land-bridge concept is the Japanese attitude to it. The New York "Journal of Commerce" states the problems in its May 13, 1968, issue as follows:

"Although the trip across the U.S. or Canada can save valuable days of travel for containerized cargo bound for European markets, if a foreign ship is used in the North Atlantic, Japan loses more foreign exchange so precious in these days of deteriorating balance of payment situations. Japan's shipping industry being what it is in importance to the nation's economy (and trade balance), it would be following an ill-advised course to expect that the Transportation Ministry and the Finance Ministry would fail to consider such a land-bridge a threat to the nation unless some sort of agreement can be worked out."

The same article suggests the possibility that Japan could overcome this problem by putting into service Japanese ships on the North Atlantic link of the chain between Japan and Europe via the North American land-bridge.

The last problem I want to mention is the possibility of an attack on the land-bridge concept by the growing capabilities of air cargo. It has been stated that planes like the Boeing 747 which will be in service before 1970 can carry 14 20-foot containers. Taking that capacity in conjunction with the speed of the aircraft, the annual capability of one plane would, of course, be quite considerable. What this may mean is a subtraction of some container volume (particularly of high value commodities) from surface routes and, therefore, a diminution of available cargo.

Quite obviously a report on the possibility of a Canadian (or for that matter, a U.S. land-bridge) between Europe and the Far East written at this time can only speculate. Prognostication, unless it is done in the vague terms of the Delphic Oracle, is dangerous but it is also challenging. This paper has tried to provide some of the background on a Canadian land-bridge. The question posed was: "The Canadian Land-Bridge. Containers in Transportation between Europe and East Asia. Revolution or Utopia?" It is not a question which can be answered by a choice of opposites. I believe, however, that it can be answered by the statement that, if a North American landbridge is viable, the Canadian variant has exploitable advantages over the U.S. variant. In both cases it will likely be neither Revolution nor Utopia but an evolution into a realizable possibility.

Port of Rijeka, Yugoslavia

Extract from "Yugoslav Ports and Shipping" By Dr. Josko Vukov

Commercial Manager

Port of Rijeka

Main Ports of Yugoslavia

Having in view the shape of Yugoslavia and the regional location of the main industry as well as the communications towards the sea we can divide the exits into the Adriatic sea in the following way:

- 1) The exit in the northern part of the Adriatic Sea
- 2) The exit in the middle part of the Adriatic Sea
- The exit in the southern part of the Adriatic Sea.

The impacts of the stage of the economic development of the hinterland of the ports, as the relevant factor of their traffic, were the criteria for the above classification.

In the north of Adriatic are the ports Rijeka and Koper.

Rijeka

Rijeka is the largest Yugoslav port. Its location is geographically the most favourable of all Adriatic ports, (45° 14' N and 14° 25' E). The Rijeka gulf, as the most northern part of the Mediterranean, has entered very deep into the continent of Central Europe. The Rijeka gulf extends to the north more than the Genova gulf for about one geographical degree of latitude (110 km) and for two degree (220 km) more than the Lyon gulf.

The port of Rijeka has a large hinterland in Yugoslavia and abroad. Taking into account the present communications towards the Adriatic Sea, the hinterland of the port Rijeka includes the bigger part of the Yugoslav national territory, economicly developed, the north part along the river Sava and Danube, then the Hungarian territory and parts of Austrian and Czechoslovakian territory.

Under definite conditions one part of the overseas trade of Bulgaria, Roumania, Poland and South Germany is directed by way of the port of Rijeka. The traffic of the port of Rijeka in the last ten years was as follows:

	(in 000)	t.)	
1938	1.381	tons	
1956	3.728	"	100,0
1957	4.209	"	
1958	3.880	"	
1959	4.060	"	
1960	4.151	"	
1961	4.031	"	
1962	4.647	"	
1963	5.943	"	
1964	5.841	"	
1965	6.205	"	
1966	8.500	"	228,0

As indicated in the table above the traffic in 1966, increased by 128%, as compared with 1956.

The traffic in 1965, according to the direction of goods, was as follows:

It is evident that in the total traffic the share of commodities for and from non-national hinterland (Czechoslovakia, Hungary, Austria, and other countries) is getting ever more important place.

In Yugoslav import, through the port of Rijeka, the most important commodities are: cereals, coal, crude oil and oil products, than cotton, jute, wool, hides and skins, south fruits, equipment, and machinery, rubber, rice, coffee etc., and in export: timber, various machines, vehicles, factory equipment, rolled products, and foodstuffs.

In the transit—traffic, for the countries behind the domestic hinterland (Austria, Hungary, Czechoslovakia, and others), prevail, iron ore, coke, fertilizers, magnesite, cocoa, rubber, rice, cotton, timber, exotic timber, and complete equipments for factories, the rolled products.

For the last ten years the basic characteristics of the traffic in the port of Rijeka have been following:

- 1) The traffic increases from year to year, at the rate of 12-13%.
- 2) The traffic for the countries behind the domestic hinterland has constantly increased, and in the same time the size of the hinterland in the Central Europe has also increased.
- 3) In the total traffic, the participation of general cargo has been increased.

The Connections with Hinterland

The port of Rijeka has relatively the best railway connections with hinterland. It is connected with national economic regions and with the countries of the Central Europe, by two railway-lines. The both railwaylines are electrified. The distance by

The Traffic of Rijeka according to the directions of goods

The Trume of I	njenu uce	orung to the	uncetions	(in 000t.)
Description	1964	Partici- pation in %	1965	Partici- pation in %	$\frac{1965}{1964}$
Total	5.841	100,0	6.205	100,0	106
Domestic traffic	479	9,1	647	10,4	135
Export	618	10,6	603	9,7	98
Import	2.516	43,0	2.579	41,6	103
Transit	2.183	37,3	2.376	38,3	109

The traffic of Rijeka according to the main categories of goods in 1965 (in 000t.)

		. ,
Description	in 000 t	in %
Total of that: <u>— general cargo</u> <u>— timber</u> <u>— bulk cargo</u> <u>— liquid cargo</u>	6.205 2.086 300 2.100 1.719	$ \begin{array}{r} 100,0 \\ 33,5 \\ 5,0 \\ 33,8 \\ 27,7 \\ \end{array} $
- 0		



the railway-line between Rijeka and Prague is 852 km, between Rijeka and Vienna 563 km, between Rijeka and Budapest 529 km, and between Rijeka and Belgrade 625 km.

The actual capacities of both railway-lines are sufficient for the growing traffic of the port of Rijeka. As the railway-terminal of Rijeka was planned for smaller traffic than the actual, the railway capacities represent a real bottleneck in operations of the port of Rijeka.

Rijeka is connected with hinterland by several roads. Towards the south of the country, Rijeka is connected by highway constructed alongside the coast, and with the hinterland by several roads, which connect Rijeka with continental part of Yugoslavia and countries of Central Europe, Austria, Czechoslovakia and Hungary. A preliminary study is now in elaboration regarding the idea of a modern highway of large capacity to provide through connection between Rijeka and Zagreb, with possible later extentions towards Vienna, Prague and Buda-pest.

An additional advantage of the assumed road should be lower vulnerability regarding the climatic disturbancies due to proposed construction in the region of lower altitude as compared with the existing road passing the mountains at high level exposed to rough climate. Because of configuration of ground no large river discharges itself into the Adriatic which would enable the connection the ports with their hinterland, as the case in North Europe. This is the characteristic of the whole Mediterranean, except the river Rhone.

The Port and other Capacities

- The port of Rijeka has these basins: a) The Petroleum port protected by breakwater, 242 m in length. The breadth of the entrance into the basin is 60 m and in the depth 12 m.
- b) The basin of Rijeka protected by breakwater "General Petar

Drapsin", 1754 m in length. The breadth of the entrance into the basin is 270 m and in the depth 30 m.

- c) The basin Susak protected by the breakwater, 420 m in length. The breadth of entrance is 50 m, and in depth 34 m.
- d) The basin Bakar is a natural basin of the elliptical shape. The length of the Bakar basin is 4600 m, and the average breadth 600-700 m. The entrance into the Bakar basin is 300 m broad and 44 m deep.

The total length of breakwaters and other protecting objects in the port of Rijeka is 2.416 m.

Besides the mentioned basins, in the port of Rijeka there is certain number of industrial ports: the port of shipbuildingyard "3 Maj", the port of the shipyard at Kraljevica (close to Rijeka), the port of the factory for marine engines "Torpedo" and the new port of the shiprepairing-vard, "Viktor Lenac".

Because of the specific configura-

tion (steep cliffs and rocky bottom) the necessity for dredging is very seldom.

The anchorage of ships is performed in front of the port within a radius of 2500 m. The connection between the anchorage and the port is performing by motor-launches of the ship agencies.

The port pilotage is regulated by the Act of Pilotage and is compulsory for all the ships over 500 GRT, except for the ships of Yugoslav Navy and passenger ships in regular line.

The pilotage service is permanent from 0-24,00 hours. The payment for the port pilotage depends on the register tons of the ship and is performed by 10 pilots, who are deepsea captains.

The towing service has 6 tugs of 600 HP to 1250 HP at its disposal. The towing service is permanent too.

There are 2 floating docks available in the port of Rijeka (in the mentioned shipyard "Viktor Lenac").

One of them for the ships up to 11.000 tons DWT and the other for the ships up to 60.000 DWT. In the port of Rijeka the toal length of the waterfront is 10.902 m. Like in many other Yugoslav ports, in the port of Rijeka during the War 90% of the wharves were destroyed. Of the total length of the wharves 4.503 m are the wharves for ocean-going ships.

The total water surface of Rijeka and Susak basins is 586.000 sq.m.

In the old part of the port there are 5 piers, of the same size. The two piers are provided with the warehouses and the two with the open storage areas. The depth in the old part of the port varies and, the biggest depth is 9,5—10 m along the quay what is enough for the largest liners.

According to their use the basins are as follows:

-Petroleum port,

- -The old part of the harbour, for general cargo,
- -Susak, for the timber and some special cargo,

-The basin Bakar, for bulk cargo. The total storage areas have

(without Bakar) the following breakdown: 1) quay warehouses

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2) quay open storage areas

- 4) remote open storage areas
- 5) trankstores for technical oils (not included industrial tanks)
 - 12.000 cu.m.
- 6) The Silo for grain
 - 32.000 tons

At a time, the port of Rijeka can accomodate 25 oceangoing ships, performing loading-unloading operations. The simultaneous capacity of storage of general cargo in the warehouses is about 120-140.000 tons. During the war many warehouses were destroyed, and newconstructed after the war. These are chiefly the storied-warehouses. In 1965, the modern three-storied (40.-000 sq.m.) warehouse, and in 1966, the new warehouse for the manipulation with hides and skins, were built. The majority of old warehouses are of non-functional lay-out and the plan of the Port Authority is provides to replace them by the construction of the modern hangartype buildings alongside the piers and quays. The open storage areas serve for storage of rolled products, which amounts to about 250.000 tons yearly, various vehicles or some other equipment, timber and also bulk cargo.

In the port of Rijeka, three years ago, alongside the quays there was constructed the silo of 42.000 tons capacity. This is the only silo in Yugoslav ports.

Daily unloading capacity of the ships of adequate construction (bulkcariers) is about 7—8.000 tons in the first phase. Unsuficient shunting capacity of railway and the shortage of wagons limited the dailyloading capacity of silo. During 1966, in 8 months of work, 900,000 tons of grain were manipulated by the silo.

The basin for bulk cargo Bakar, is one of the most modern capacities. The quay is 240 m in length (in the I phase) and in depth 15,5 m what means that the ships up to 100.000 DWT can be accomodated. The loading mechanization consists of two unloading towers with grabs of the total capacity of 1440 tons per hour, with loading possibilities into the wagons of 800 tons per hour. The possibility of simultaneous storage amount to about 300.000 tons of iron-ore. The total commerical capacity of this basin is 3,000.000 tons yearly. In the II stage of construction is planned the total length of quay of 456 m, the open storage areas for ironore, with the simultaneous capacity of storage of 500.-000 tons, and the unloading output of 3.000 tons per hour with total capacity of 6,000.000 tons yearly.

As far as the mechanical capacities, are concerned besides the basin



for bulk cargo at Bakar and silo, the port of Rijeka is the best equipped Yugoslav port.

The total number of the quaycranes of $3\sim5$ tons lifting capacity amounts to 56 units. The mentioned cranes are placed alongside the quays in groups of $3\sim5$ units each. They are of different structure and type, with predomination of the portal cranes, of 5 tons capacity with satisfactory speed of loading or discharging. Meanwhile, many of them are obsolete and it is planned to replace about 30 of these cranes.

There are 18 auto-lift trucks in total, with different capacities of $3\sim20$ tons. The types are different, what is an obvious disadvantage. They are used for work in open storage areas and in the first place in cargohandling of rolled products, machines, tubes etc.

Especially in the recent time, the line mechanization is in use for operations on the line "ship-warehouse-wagon" and viceversa, as well as in the warehousing manipulations. The total number of fork-lift trucks is 120 pieces, also of different types. In the program up to 1970, it is foreseen the purchase of additional 200 fork-lift-trucks. By adjusting the areas in the port, the fork-lift trucks replace, in port operations, tractors and tractor-trailers. In Yugoslav ports before the introduction of fork-lift trucks in cargohandling process, there were dominating the very expensive works performed by tractor and trailers. Even now in the port of Rijeka are about 350 tractors and trailers. There is not doubt, that they still will remain in the use to a certain extend especially for the moving of loads on greater distances within port areas, but in the line "ship - warehouse", they will be put out of the use, because the number of operations has diminished, and consequently the participation of the manual labour which become in Yugoslavia and especially in ports, the most expensive element in the cost beak down.

In the recent time, the various conveyer-transporters have been introduced in port operations.

The port of Rijeka has 2 floating

cranes, of lifting capacity of 100 tons each.

The operations with barges began 4 years ago. The total number of barges is 10. In the port of Rijeka, the work with the barges is done only in the period of "peak traffic" or for temporary storages and their capacities are not fully exploited.

For last two years, a work with various kind of pallets has been introduced. It has been very effective, inspite of the limited utilization. The palletisation of skins (about 50,000 tons yearly) rubber, sugar (300,000 tons yearly), coffee, etc. (mainly, the cargo packed in bags) was achieved. Today in the port there are available about 60,000 pieces of different kind of pallets. This is, of course, insufficiently. Although, the operation with the pallets is more useful (better use of storages areas, less damaged goods, faster working operations, introducing of forklifts etc.) but it is still limited to the port and not to the whole transport chain. The attempt is performing to palletization the



whole transport chain, in the inland transport. In all Yugoslav ports participation of ports mechanization, in the total (port output) of cargo, is follows:

37	Total	By quay and mobile port mechanization		
iear	(in 000 tons)	(000 tons)	Participation (%)	
1960	11.389	5.282	46	
1961	12.085	6.213	51	
1962	12.839	7.170	56	
1963	16.504	10.028	61	
1964	16.805	10.072	60	
1965	16.535	11.380	69	

Note: included the traffic on the industrial quay in the port.

In the port of Rijeka 80% of cargo transport is performed by port and 20% by ship mechanization. **Port Administration**

In the port of Rijeka, according to the Exploitation of Ports and Harbours, Act, of 1961, there are a few enterprises for cargohandling operations and other port services. Because of coordination in the work and common administration and for planning of investments, the Municipality of Rijeka established the Association of the port Enterprises, which consists of all enterprises performing port services. The mentioned enterprises are specialized for:

a) general cargo,

- b) bulk cargo,
- c) timber,
- d) cargohandling concerning coastal shipping,
- e) various services like pilotage, towage, mooring and unmooring, supply of water and electricity, as well as technical services for all ports enterprises.

For all mentioned port enterprises, the following services are concentrated in the Association:

- -commercial-economic department
- ---planning of operations department
- -department for investment ----

development

-department for personnel.

The main task of Port Association is the market research, the promotion of port technology, the planning of the future port development, the coordination of day-by-day operational plans and the performing of commercial policy.

The owner of the port is neither the state nor a private person.

The Board of Management of Association of the Port Enterprises is the highest authority in the port. In that Board there are representatives of all port enterprises. In addition each of these enterprises has its own Worker's Council. The Board of Management in the session creates the main decisions, which are afterwards performed by the general manager and the corresponding departments.

The total income during the year and at the end of the year, is planned and distributed by Managing Boards and Workers' Counsils independently of any government authority. At that occasion it is being decided what part of the total income will be spent for payroll, what for the operating expenditure, and what for investments. The general manager is being elected by Port Managing Board, which is composed only of port members. The same procedure is used for directors of the departments. The elections are made on the basis of public advertising.

Port Operations

The flag which prevailing in the transport of the cargo through the port of Rijeka, is Yugoslav. Of the total 8,400,000 tons in 1966, about 4 million tons or 47,6% were transported by Yugoslav ships, and about 4,400.000 tons or 52,4% by ships under the foreign flag. In the last several years the proportion was about 50:50. It is interesting to mention, that the participation of ships under the foreign flag is bigger in Yugoslav export (64%) and especially in import (68,4%), while the participation of the ships under the Yugoslav flag is bigger in the transport of the transit-cargo from and for Austria, Czechoslovakia and Hungary, and amounts to 53%.

After the ships under the Yugoslav flag, according to the importance, come the ships under Italian, USA, Great Britain etc. flag. The total number of ships, arrived in 1965 amounted to 8.492 with the total tonnage (NRT) of 6,756.000.

Up to now, the old part of the port entered the ships of all kind and size, but mostly up to 33.000 tons of dead-weight tonnage. In recent years, because of the great quantity of the iron ore from India for Czechoslovakia, the great number of ships of all kinds of the type "Liberty" entered the port of Rijeka. The new basin for bulk cargo at Bakar will accommodate the ships up to 100.000 DWT.

The port of Rijeka, according to number of the liner departures, is the most frequent Yugoslav port. There are four times in month sailings for the United States, for the Near East and the Middle East and for the North Europe, then several times in week for Greece and Turkey, and the North Africa, two times in month for the Red Sea, once in month for Canada and the South America, then India and Japan. Not only the Yugoslav liners companies, but also many foreign shipping companies, have the abovesaid lines.

From up to the present long years experience it is difficult to find out

the seasons of the biggest traffic, which are continually repeated in cycles. The oscillations from month to month are notable, and the highest differences from the average traffic amount to about 50% and the lowest to about 45% and they don't repeat in the same months or periods. Analysing the ten years average, still one can say, that the period of the biggest traffic is in the I and IV quarter of the year. **Port Labour**

The port of Rijeka employed 5.583 workers and office employees in the 1965. All these are permanent workers and office employees, and the periodical don't exist. In the frame of the port and its organization, as it was described before, it doesn't exist the special organization which put the workers at disposal of "the stevedore" or "the warehouse keeper". The port is organized in the way that the whole cargohandling procedure is performed only by one enterprise e.g. the enterprise for general cargo, which besides permanent workers and office employees, owns also all the necessary equipment (cranes, autolifts, autocranes etc.), the warehouses and the open storage areas. The technological procedure of the work is unified e.g. the enterprise which deals in general cargo, it performs the stevedoring as well as the warehousing of the cargoes. The same is with the enterprises which perform the loading and unloading of bulk cargo and timber.

Within the Association of the Port Enterprises exists only one enterprise, which is owner of the port infrastructure i.e. of the quays, rails, etc. and takes care of their construction and maintenance, and for which the other port enterprises pay the rent which is settled before in the Managing Board of the Association of the Port Enterprises. The mentioned enterprise maintains also the technical equipment of other port enterprises, and performs the services of pilotage, towing, mooring and unmooring sale of water and current. All activities of the port are concentrated in the Association of the Port Enterprises Rijeka, and to the third person the Port Association is the bearer of all port activities.

The total number of employed

persons in the port of Rijeka amounts to 5.583. Of this total 4.845 are workers (dock workers, autolift drivers, elevator men, mechanics etc.) and 738 belong to the office and warehouse staff (various engineers, specialists, technician, technologist, economists, lawyers and medical staff).

The working hours in the port are, in two shifts, from 7 a.m. to 10. p.m. and if necessary (what happens very often) also during the night.

The average net wage for the whole port amounts to 100 USA \$ a month for dock workers. The unemployment insurance, the old-age insurance, the Social insurance and other benefits are paid separately by enterprise. Because of the "peak" and the oscillation the overtime work is imposible to avoid and it is paid plus 50% of regular work and 100% on Sundays and there are a great number of workers and elevator men who earn, including the overtime work, about 150-180 \$ monthly.

In comparison with Yugoslav averages and including the additional payment for social insurance etc. it is a good average.

All the workers are paid on the base of the manipulated ton, and the others, who are paid per hour, are also connected to the payment per ton according to a special system.

In the port, there is the Center for Education with the permanent teachers staff, where the workers get the port qualifications. The neccessary funds are formed by the port enterprises.

There are also several canteens and one central mess, which work without profit, and the workers get the meals at the lowest price.

In the port exists a good developed service for the safety at the work, authorised by The Managing Board and Worker's Council, to stop the work, if the workers and the other staff don't respect the prescribed rules.

The problem of arriving at work doesn't exist because in Rijeka, the city transportation, as well as suburban areas transportation, are good organized. The problem of housing is still present. The port of Rijeka is building yearly, from its funds, for his workers about 200 to 250 two- or three-rooms-flats. **IMCO** As Seen by IAPH

Reports by observers from IAPH at IMCO sessions

Report No. 8

Date: September 17~20, 1968

- Place: IMCO Hqs., London
- Session: The 6th Session of the Sub-Committee on Safety of Navigation, Maritime Safety Committee, IMCO

Observer from IAPH:

Commander G. V. Parmiter, R. N., Chief River Manager, Port of London Authority

- Agenda (Provisional): NAV VI/1/ Rev. 1
- 1. Adoption of the agenda
- Traffic separation and routing schemes; general principles and definitions; further proposals if any; preparation of an appropriate publication (NAV VI/ 2, NAV VI/2/1, NAV VI/2/2, NAV VI/2/3, NAV VI/2/4, NAV VI/2/5, NAV VI/2/6)
- Standards for training and qualifications of officers and crew; training and qualifications required to use shipborne navigational equipment; standardization of licences for masters and officers (NAV VI/3, NAV VI/3/1, NAV VI/3/2)
- 4. Use and testing of shipborne navigational equipment; proposals for amending the appropriate ships' certificates (NAV VI/4)
- Efficiency of navigation lights (reconsideration of document "Recommended Practice for Navigation Lights") (NAV VI/ 5, NAV VI/5/1, NAV VI/5/2)
- Disposition of navigation lights (NAV VI/6, NAV VI/6/1, NAV VI/6/2)
- 7. Efficiency of sound signals (NAV VI/7)
- 8. Revision of the International Regulations for Preventing Collisions at Sea (NAV VI/8)
- Unification of local special rules referred to in Rule 30 of the International Regulations for Preventing Collisions at Sea (NAV VI/9)
- 10. Any other business (NAV VI/ 10, NAV VI/10/1).

FEBRUARY 1969

Text of Report:

The sixth session of the Sub-Committee on Safety of Navigation was held in London from 17th to 20th September, 1968. The Agenda for the meeting is attached for reference.

Item 2—Traffic separation and routing schemes.

The working group completed its examination of traffic separation schemes and has submitted the schemes to the Maritime Safety Committee for approval. In the meanwhile the main Sub-Committee completed its deliberations on Terms and Definitions to be used with Routing and prepared its report to the Maritime Safety Committee.

In connection with my report of the fifth session on Item 2 (a) and (b) your observer continued to press for an alteration to the wording indicating that Governments would have to obtain the approval of IMCO before establishing routing or traffic separation schemes in Port Approaches which might extend beyond territorial waters. He was strongly supported by the delegates from U.S.A. Canada and the Netherlands, and after protracted discussion the offending paragraphs have been re-worded to read as follows:-

"Adoption and Recommendation of International Routing and Areas to be Avoided

- 1. IMCO is recognised as the only international body responsible for establishing and recommending measures on an international level concerning routing and areas to be avoided by ships or certain classes of ships.
- 2. (a) A government proposing a routing system or an area to be avoided, any part of which lies within international waters, should **CONSULT** with IMCO so that such system or area may be adopted or recommended by IMCO for international use.

(b) A government may establish or adjust a routing system or area to be avoided by certain classes of international shipping **BEFORE** consulting IMCO where **LOCAL** conditions require that early action be taken. (c) A government when proposing, establishing or adjusting a routing system or area to be avoided by certain classes of ships should follow IMCO principles and practice so far as may be possible and practicable in the circumstances."

Your observer considers the new wording could now find acceptance by Members of IAPH recommends that Members advise their National Delegations accordingly before the Maritime Safety Committee meets to discuss the Item.

Items 3 and 4 were of no concern to IAPH.

Items 5 and 6-Efficiency and Disposition of Navigation Lights.

These items are of marginal interest to Members of IAPH where ships are navigating in narrow channel. Some progress was made in the disposition of Masthead lights to give an indication of length and in side lights to give an indication of beam, but no reference was made to the stern light. Your observer discussed this informally with several of the national delegates and the Federal Republic of Germany is to raise the matter at the next session.

Clearly, these items and item 7, Efficiency of Sound signals will affect item 8—revision of the International Regulations for Preventing Collisions at Sea. In this matter the Sub-Committee took note of the terms of reference given to it by the Maritime Safety Committee and exchanged preliminary views mainly on the method of organising its work. A more detailed discussion will be held at the next session.

Item 9—Unification of local special rules and regulations referred to in Rule 30 . . .

Your observer stated that while Ports and Harbours would agree that certain of the more generally used signals should be standardised and internationally recognised, they would have considerable reservations on attempting to interfere with local rules and regulations which must be under the local authorities and which is not considered a suitable matter for an international body to concern itself.

The point was well taken and it was decided to tackle one thing at a time and delegates were asked to bring details of dredging signals to the next meeting to see if these could be internationally agreed and put in the International Collision Regulations. Your observer agreed that this was most desirable and suggested that signals for Divers, underwater construction work and mandatory "Go dead slow" were suitable for international standardisation. Delegates were asked to bring their suggestions to the next meeting.

Your observer considers that this Item will have to be carefully watched if Ports and Harbours are to retain their Authority over their local waters. It is recommended that Members should keep in close touch with their National Delegations in this matter.

The Maritime Safety Committee meets 21st-25th October, to consider the report of the Sub-Committee and the 7th session of the Sub-Committee is programmed for 25th-28th March, 1969.

Report No. 9

Date: October 21~25, 1968

- Place: IMCO Hqs., London
- Session: The 18th Session, Maritime Safety Committee, IMCO
- Observer from IAPH: Commander G. V. Parmiter, R. N., Chief River Manager, Port of London Authority
- Agenda (Provisional): MSC XVIII/ 1/Rev. 1
- 1. Adoption of the Agenda
- 2. Report of the Secretary-General on credentials
- 3. Consideration and approval of recommendations proposed by sub-committees:
 - (a) Recommendation on uniform application and interpretation of Regulation 27 of the International Convention on Load Lines, 1966
 - (b) Recommendation on traffic separation schemes and related matters
 - (c) Recommendation on additional signals for deepdraught ships in narrow channels
 - (d) Any other recommenda-

tions

- 4. Standards for training qualifications and certification of officers and crew including arrangements for IMCO/ILO Joint Committee
- 5. Review of the relevant safety certificates in connexion with amendments to Chapter V of the International Convention for the Safety of Life at Sea, 1960
- 6. International Convention on Load Lines, 1966.—Correction of errors and proposed amendments
- 7. Safety of drilling rigs and production platforms:
 - (a) Constructional aspects and fire protection
 - (b) Navigational problems related to their operation
- 8. Code of Safety for Fishermen and Fishing Vessels
- 9, Procedure for amending and up-dating the International Regulations for Preventing Collisions at Sea
- 10. Status of air-cushion vehicles; requirements for legislation
- 11. Minimum standards for lookout systems: Proposal by the Government of France
- 12. Containers and their carriage by sea
- 13. Safety of nuclear ships—"Safety Consideration in the Use of Ports and Approaches by Nuclear Ships"
- 14. Report of the Ad-hoc Sub-Committee on Revision of Simla Rules
- 15. Establishment of common criteria of the strength of the Ship's hull: Proposal by the Government of the Soviet Union
- 16. Automation in ships
- 17. Examination of reports submitted under Regulation 19, Chapter I of the 1960 Safety Convention
- 18. Report on exemptions granted by Member Governments in relation to radio requirements
- Review of the work programme for 1968/69
- Preliminary consideration of the work programme for 1970/ 71
- 21. Consideration of Council Resolution C XX/Res. 41
- 22. Date of next session

- 23. Any other business
- 24. Consideration of the report of the Committee on the work of its eighteenth session.

Text of Report:

The eighteenth session of the Maritime Safety Committee was held in London from 21st to 25th October, 1968. The Agenda for the Meeting is attached for reference and your observer reports as follows:—

The Committee requested the Secretary General to submit the following Recommendations to the Fourth Extraordinary Session of the IMCO Assembly (meeting in London 26th-28th November) for consideration and adoption:—

- Uniform application and interpretation of Regulation 27 of the International Convention on Load lines (1966) prepared by the Sub-Committee on Sub-Division and Stability.
- (2) Recommendations for three additional traffic separation schemes.
 - (a) San Francisco
 - (b) Baltic Sea
 - (c) off Southern Norway
- (3) Terms and Definitions to be used and general principles regarding traffic separation and routing and to include same in a publication which is being prepared by the Secretariat.
- (4) Recommending the use of additional signals for the identification of deep-draught vessels when navigating narrow channels.
- (5) Recommending a document setting out performance specifications and standards for ships' navigation lights together with a chromaticity chart indicating the agreed colour boundaries.
- (6) Recommending a document on the positioning of Navigation Lights in all new construction.

The following matters are to be considered further or referred back to the appropriate Sub-Committees.

- (1) Standards of training, qualifications and certification of Officers and Crew.
- (2) Amendments to the International Convention for the Safety of Life at Sea (SOLAS

22

1960) regarding survey and testing of shipboard navigational equipment.

- (3) Corrections and amendments to the International Convention on Load Lines 1966.
- (4) Safety of Drilling Rigs and Platforms.
- (5) Code of Safety for fishing vessels and fishermen.
- (6) Procedure for amending and up-dating the International Regulations for Preventing Collision at Sea.
- (7) Status of Air Cushion Vehicles and requirements for Legislation.
- (8) Minimum standards for lookout systems.
- (9) Containers and their carriage by sea. In this connection, the name of the Sub-Committee on Bulk Cargoes has been changed to the Sub-Committee on Containers and Cargoes.
- (10) Safety considerations in the Use of Ports and Harbours by nuclear ships. In this connection the final report prepared by the International Atomic Energy Authorities Consultative Group of Experts meeting in Vienna in March 1968. (IAEA Safety Series No. 27) will soon be circulated to all IMCO Members.
- (11) Revision of Simla Rules.
- (12) Establishment of common criteria of the strength of ships' hulls.
- (13) Automation in ships
- (14) Exemptions granted by Contracting Governments in relation to radio requirements.
- (15) Manual on Survival at Sea.
- (16) Manual on Search and Rescue Operations at Sea.
- (17) Establishment of the Joint (IMCO / FAO / UNESCO / WMO) Group of experts on the Scientific Aspects of Marine Pollution.

The Committee then considered the future work programme and the attached Annexes indicate the scope of the Committee's work with a preliminary programme of meetings for the next year.

FEBRUARY 1969

Orbiter Probe

IAPH News:

To Melbourne, To Melbourne

We have every reason to believe that Melbourne Conference will become a grand occasion, the grandest ever for IAPH, as the Conference Organizing Committee already has applications from 275 delegates and 150 ladies representing 35 countries.

Mr. Fidge, Secretary of the Organizing Committee, however, was not happy in writing us the following paragraph: "As the Lionel Rose (Continued on next page bottom)

Annex I (MSC XVIII/19):

List of Meetings as Approved by the Assembly for 1968/1969

	Meetin	g-weeks
	1968	1969
Tonnage Measurement Conference		4
Assembly	$\frac{1}{2}$	2
Council	$1\frac{1}{2}$	2
Maritime Safety Committee	2	2
Sub-Committee on Life-Saving Appliances	1	1
Sub-Committee on Safety of Navigation	2	1
Sub-Committee on Radiocommunications	2	2
Sub-Committee on Tonnage Measurement	2	
Sub-Committee on Subdivision and Stability	3	3
Working Group on Stability of Fishing Vessels	5	5
Sub-Committee on Fire Protection	2	1
Sub-Committee on Oil Pollution	9	1
Working Group on Oil Pollution	4	1
Sub-Committee on the Carriage of Dangerous Goods	2	2
Sub-Committee on Containers and Cargoes	2	1
Sub-Committee on Ship Design	2	1
Unallocated Meetings connected with the "Torrey Canyon"		2
Ad Hoc Working Group on Facilitation	1	1
Legal Committee	2	1
IMCO/ILO Joint Committee	1	1
	28	28

Annex III (MSC XVIII/19):

Meetings Scheduled for the First Half of 1969

* 7–10 January	IMCO/IOC/FAO Joint Group of Experts on the
	scientific aspects of Marine Pollution—1st session
14–17 January	Sub-Committee on Radiocommunications—5th session
21–24 January	Sub-Committee on Subdivision and Stability -9th
• •	session
28–31 January	Sub-Committee on Bulk Cargoes—8th session
4– 7 February	Sub-Committee on Life-Saving Appliances-3rd ses-
	sion
*24–28 February	Maritime Safety Committee—19th session
*25–28 March	Sub-Committee on Safety of Navigation-7th session
*15–18 April	Legal Committee—5th session
*28 April–2 May	Sub-Committee on the Carriage of Dangerous Goods
. ,	—16th session
* 6–9 May	Sub-Committee on Oil Pollution—6th session
*12–16 May	Council—22nd session
27 May–23 June	International Conference on Tonnage Measurement
* 1– 4 July	Ad-hoc Working Group on Facilitation—3rd session
* 8–10 July	Joint Ad-hoc Group for External Forces-2nd session
0 /	* Tentative

Help Wanted at UNCTAD

A vacancy exists in the Secretariat of UNCTAD for an economist to work on the economic issues involved in the development of ports in developing countries. The duty station is Geneva, but frequent missions may be expected. The man appointed is likely to be a graduate in Economics and to have several years experience working in a port (or airport) on either general administration or development plans. He will join a team headed by a systems analyst and including an engineer and an economic geographer; the whole team works under the overall supervision of a senior economist. Salary in accordance with age and experience on official UN scales. The appointment may be for a fixed term of two years or on a probationary basis with the possibility of a career appointment. Fluency in English is essential. French or Spanish highly desirable.

For further particulars and application form please write to Office of Personnel, UNCTAD, Palais des Nations, Geneva.

(Continued from preceding page)

World Championship Title Fight is to take place in Melbourne during the Conference week, this is going to put considerable strain on accommodation resources here and, in fact, the Conference Hotels have placed very strict limits on accommodation which they will guarantee us from now on".

The Organizing Committee has prepared Conference Handbooks for Delegates and Ladies, a 40-page handy pocketbook-size booklet for Delegates, and a half-size equivalent for Ladies. It is a handbook on the program and general information, with a folded map of the City of Melbourne.

It describes Conference Services such as banking services, conference transport, Post Office, Tourist Bureau, air travel, document distribution, conference office, photographic records, wrapping service, information and name plate identification. There is a tab for each day so that you can thumb out any one day and look up the program, be it a conference day or a post conference tour day.

Port Seminar, Japan

The 8th Seminar on Ports and Harbours (fiscal year 1968) organized by the Overseas Technical Cooperation Agency of Japan is in session January 27 through March 10, 1969.

Eighteen port officials from 16 nations are taking part; two each from Indonesia and Thailand, and one each from Argentine, Burma, Ceylon, Colombia, Costa Rica, Iran, Malaysia, Mexico, Peru, The Philippines, Syria, Turkey, United Arab Republic and Venezuela.

The 6-week seminar will be a series of lectures, reportings and evaluations punctuated by observation of ports and related industries.

ARELAP Meetings

Bogota, Colombia:—The Regional Association of Pacific Coast Latin American Ports (La Asociacion Regional Latino-americana de Puertos del Pacifico-ARELAP) has had two meetings during 1968. The Third Convention was held in Bogota, Colombia March 30, 1968, and The Fourth was held in El Callao, Peru August 29 through September 2, 1968. The President of the Association is Dr. Alvaro Dugand Donado, Executive Director of "Puertos de Colombia".

IMCO Program

1969

- January 7~10 Working Group II of the Legal Committee—3rd session
- January 13~17 Sub-Committee on Radiocommunications—5th session
- January 20~24 Sub-Committee on Subdivision and Stability— 9th session
- January 28~31 Sub-Committee on Containers and Cargoes— 8th session

- February 3~7 Sub-Committee on Life-Saving Appliances — 3rd session
- February 24~28 Maritime Safety Committee—19th session

March 4~7 Legal Committee— 5th session

- March 11~13 Council—4th Extraordinary session
- March 17~21 IMCO/IOC/FAO Joint Group of Experts on the Scientific Aspects of Marine Pollution—1st session
- March 24~28 Sub-Committee on Safety of Navigation—7th session
- April 15~18 Sub-Committee on Marine Pollution—6th session
- April 22~25 Sub-Committee on Ship Design and Equipment— 3rd session
- April 29~May 2 Legal Committee--6th session
- May 6~8 Working Group on IMCO's Objectives and Methods—2nd session
- May 9 Pre-Council Budgetary Working Group
- May 12~16 Council—22nd session
- May 27~June 23 International Conference on Tonnage Measurement
- July 1~4 Ad Hoc Working Group on Facilitation—3rd Session
- July 7~11 Ad Hoc Sub-Committee on Revision of SIMLA Rules—2nd session
- Sep. 8~12 Maritime Safety Committee—20th session
- *Sep. 16~19 Sub-Committee on Containers and Cargoes—9th session
- *Sep. 23~26 Sub-Committee on the Carriage of Dangerous Goods— 16th session
- Sep. 30~Oct. 3 Working Group on Stability of Fishing Vessels —9th session
- Oct. 15~30 Assembly—6th session
- Nov. 10~28 International Legal Conference on Marine Pollution Damage
- *Dec. 2~5 Sub-Committee on Fire Protection—9th session
- *Dec. 9~12 Sub-Committee on

Subdivision and Stability—10th session

Dec. 16~19 Unallocated meeting of a Maritime Safety Committee Sub-Committee

* Tentative

N.P.C. Bulletin

"Research and Technical Bulletin No. 4 1968" was published by the National Ports Council, 17 North Audley Street, London, W1Y 1WE, U.K. The price is 15/—incl. postage. The book is $146 \times 209 \text{ mm}$ format, having 52 pages (pages $134\sim185$) in art paper center stapled with board paper cover printed blue on the outside. The contents are as follows:

Page

Cargo Management in the 1970s 134 Containerisation the on North Atlantic 142 Container Berth Simulation Study 158 Maintenance Dredging on 167 the Tees Some Techniques of Method 169 Study British Docks Transport Board Research Station Annual Report for 1967 177 Economic and Operational Research on Container Sys-179 tem Port of San Francisco. An in-depth study of its impact on the city: its economic future, the potential of its 180 Northern Waterfront. Information Sources 185 A folded chart titled "Container Research" is pasted on to cover 3

Research" is pasted on to cover 3 giving detailed classification of 17 studies on containers conducted by various public and private institutions.

In addition to the Annual Report and Accounts for 1967 published by Her Mejesty's Stationery Office in April, 1968, the Council have published the following:—

Research and Technical Bulletin No. 3/68 price 15/– Port Traffic on Unit Transport Services Great Britain 1965 and 1966 price 10/– Digest of Port Statistics 1967* price 45/–†

The U.K. Deep Sea Trade

Routes-The Potential for Container Services based on physical cargo characteristics price 105/-Cargo Management in the 1970's price 105/-Containerisation on the price 105/-North Atlantic Future Publications:-Port Traffic on Unit Transport Services Great Britain 1967 November 1968 Digest of Port Statistics 1968 November 1968 * also available through H.M.S.O.

† exclude cost of postage

Nuclear Dredging?

Washington, D.C.: — The U.S. State Department has given the Australian Government authorization to deal directly with the U.S. Atomic Energy Commission on plans to construct a port by peaceful nuclear explosions.

Australia's Ambassador Sir Keith Waller delivered a note January 22 asking the United States to authorize the AEC to participate in a feasability study for the nuclear project.

The port would be constructed at Cape Keraudrem in Western Australia near large iron ore deposits. There are presently no facilities for shipping the ore.

According to Australian authorities, plans call for the explosion of five 200-kiloton nuclear charges set at some 335 meters apart at a depth of 244 meters off the cape. The cost of this enterprise is estimated at \$6 million.

The blast would help dredge the harbor and channel for ocean-going vessels 129 km. northeast of Port Hedland. The AEC and Australian technicians would examine the economic and technical value of using this means for constructing the port before a final decision is made to go ahead, it was learned. (Japan times)

500,000-T Tanker

Tokyo:—Japan may construct a super-mammoth tanker of the 500,-000-DWT class this year.

With the backing of the Trans-

port Ministry, a blueprint of the 500,000-tonner has already been drawn up by the Japanese shipbuild-ing industry.

Technically, the industry sees no stumbling blocks to the construction of such a behemoth.

The only problem that remains to be solved is how to economize production costs, industry sources said.

Ishikawajima-Harima Heavy Industries Co. and Mitsubishi Heavy Industries Ltd. are currently building 312,000-DWT oil tankers.

Tokyo Tanker Co., a leading tanker operator, has placed an order with IHI for a 370,000 tonner recently, it was also learned.

Its construction cost may run to \$8,000-million-\$9,000-million. The ship is scheduled to be completed by the autumn of 1971.

The 500,000-ton tanker designed by the Transport Ministry will have a draught of 27 meters, same as that of a 370,000 tonner.

A leading Japanese ship operator said the construction of larger tankers will gain momentum in order to reduce maritime transportation costs.

He predicted that Japan, leading the world for many years in terms of tonnage launched will be the first in the world to build a 500,000tonner. (Japan Times)

Containers Not So Safe

New York, N.Y., Jan. 28:—Containerized freight is not nearly as safe from damage and pilferage as its enthusiasts claim, a marine insurance expert said last week.

Carl E. McDowell, executive vicepresident of the American Institute of Marine Underwriters, told the Mariners' Club that salesmen for containerized freight services have been over enthusiastic in holding out the hope of lower insurance costs to customers.

He said containers are not as strong or well designed as they should be and suffer damage on the decks of ships. But the major cause of damage is bad loading and packing inside the containers, McDowell said.

Also, he said, containers are

The 5th International Seminar of Port Management in the Netherlands

Delft, Amsterdam, Rotterdam

April 14-May 17, 1969

The Fifth International Seminar on Port Management in the Netherlands is to be held from April 14-May 17, 1969 in Delft, Rotterdam and Amsterdam, according to an announcement dated January 3, 1969 by the NUFFIC (Netherlands Universities Foundation For International Co-operation, at 27 Molenstraat, The Hague, The Nether-

opened too frequently and unnecessarily by inspectors and because dockside labor unions insist on rehandling the freight. Each opening leads to risk of damage and pilferage. (Shipping and Trade News)

ILA Strike

J. C. Pierce, federal mediator who has attended more than a score of meetings between the International Long-shoremen's Association (ILA) and the New Orleans Steamship Association, said "If they could get over the issue of containerization the remaining ports would quickly fall into place."

"The ILA position is that all ports should sign the same containerization conditions that they reached in New York. This is the big issue in New Orleans," Pierce said.

South Atlantic ports have reached a tentative agreement basing wages, guaranteed annual wages and containerization on whatever New Orleans does. (Shipping and Trade News)

lands).

The programme offers a lecture period of two weeks, the first and the final week of the course, which will take place in Delft as part of the training offered in the International Courses in Hydrology and in Hydraulic and Sanitary Engineering.

During the remaining weeks visits will be made to the Ports of Amsterdam and Rotterdam (two weeks) and several days will be spent in visiting a few ports in France.

Participation in the seminar is limited to 25 persons who preferably should have a university background and several years of experience in a port management setting.

The full particulars of the Prospectus are reproduced below.

Introduction

The speeding up of the turnround of shipping at ports has been referred to by the United Nations' Conference on Trade and Development as being a vital problem in relation to world trade. Foreign port administrators, many coming through the intermediary of the United Nations, have spent observation periods in Dutch ports. It is doubtful whether these means of observation have always yielded good results.

A theoretical basis was lacking. It was easy to observe the techniques, but difficult to understand why they were applied. It also often proved difficult to adapt the knowledge acquired in the Netherlands to the situation in the observer's country.

For this reason the need was felt

to organize a special seminar. The International Technical Assistance Department of the Ministry of Foreign Affairs which gave its intermediary for study visits to the Dutch ports took the initiative to combine individual requests by means of an international seminar. The Port Authorities of Amsterdam and Rotterdam, which have frequently been approached by individual visitors, were pleased to give their full support to this idea.

The formal teaching part of the seminar is the responsibility of the International Courses in Hydraulic and Sanitary Engineering in Delft. The 11 month International (postgraduate) Course in Hydraulic Engineering given by this institution, which was held in 1957 for the first time, has been offering in its "tidal and coastal engineering branch" an all-round training to port- and harbour engineers,. It is obvious that the same ground cannot be covered in a 5 week seminar as in the full 11 month course; therefore the programme of the seminar does not contain a discussion of structural and hydraulic aspects but is confined to a through treatment of the organizational and management aspects of ports.

The former four Seminars on Port Management have brought together 99 port administrators from 41 different countries. The discussions between them proved to be very valuable. Therefore each participant is expected to deliver a short statement on problems of special importance of his work in his country. Candidate-participants are requested to take material with them which they would like to present at Delft.

Subjects taught in the seminar

- A. lecture parts: April 14~19 and May 12~17, 1969, and possibly a few other dates.
- 1. General survey of problems of transportation in general and of navigation.

Size and development of world traffic. Economic significance of transport of goods. Development in size and type of ship.

2. Port Management.

The International character of

ports and their dependency on local political context. Coordination between ports. Diversity of port organization, the port area and port function. Statistics and reports as tools of management. Operation and financing of a port.

- 3. Lay-out of port areas. Master plan and design features of general and specialized berths. Road and railway connections of ports.
- Cargo Handling. Aids to quicker turn-round of ships. Causes of delay to output. Handling of roll-on roll-off and container cargos.
- 5. Port Labour.
- Safety and health.
- B. programme of visits to and around the ports of Amsterdam and Rotterdam
- Amsterdam: April 21~26, 1969 Introductory lectures on the port, its history, organization, operation and future. Visits with explanatory lectures

to:

The harbour entrance at IJmuiden and the locks and new breakwaters.

Theory and practice of handling a general cargo from various types of ships.

Handling special cargos such as cereals, soft and hard wood, containers.

Freezing warehouses. Shipbuilding and repair yards.

Fishing port. Harbour police and fire brigade.

2. Rotterdam: May 5~10, 1969

Introductory lectures on the port, its history, organization, operation and future.

Visits with explanatory lectures to:

Various sections of the port with the large port extensions at Europoort.

Stevedoring enterprises and warehouses. Port training institute. Handling of containers and of unit loads.

Mechanical transhipment and storage of general cargos and cereals. Navigational radar stations.

C. study visit to a few ports outside

FEBRUARY 1969

the Netherlands: April 27~May 3, 1969.

The organizers of the International Seminar on Port Management consider it of great importance that participants not only get acquainted with the ports in the Netherlands, but that they also study a number of other ports. For the 1969 Port Seminar preparations are being made to visit a few ports in France.

D. participants' statements on conditions in their own countries

Application and admission

The seminar is open to government officials and other qualified candidates who in their daily activities have been confronted with problems of port management for a number of years. Candidates should preferably have a university degree, although in special cases experience can replace a university background. No simple formula can be given for the conditions of admission and for this reason applications will be considered individually. In order to enable the organizers to judge the applications properly, candidates should fill in the attached application form as completely and clearly as possible and return it to the Registrar.

All candidates are required to submit a letter of recommendation from their employer. They are advised not to come to the Netherlands to follow the seminar before they have received notice of admission. In order to promote a close contact between the lecturers and participants and to stimulate discussions, the number of participants will be limited to 25.

Duration of the seminar

The seminar will begin on Monday, April 14 and close on Saturday, May 17, 1969. Participants are expected to arrive on Sunday, April 13, 1969.

Language

Since the course will be given in English, a good working knowledge of this language is a prerequisite. Fees and other expences

The participation fee is Dfl. 2100,—, which includes the tuition fee, travel costs for the fieldtrips within the context of the course and

the cost of lodging and breakfast during the period of the course. Participants are required to pay lunch and dinner expenses. Unfortunately it cannot be guaranteed that hotels will always have single rooms available.

The participation fee should be paid before or on registration day. Those preferring to pay in advance are requested to have the participation fee paid into the account of NUFFIC at the Amsterdam-Rotterdam Bank, 14, Wagenstraat, The Hague.

Fellowships

It is expected that a number of participants will be granted fellowships by their employers or by national or international fellowship granting organizations, such as the United Nations, the International Labour Organization (I.L.O.), or the Organization for Economic Co-operation and Development (O.E.C.D.). Candidates who wish to receive information about financial facilities provided by the Netherlands to candidates coming from developing countries should apply to the Netherlands Diplomatic Representative in their countries. Netherlands Government fellowships do not include an amount for travel expenses from the country of origin to the Netherlands and v.v.

Insurance

Participants are expected to insure themselves against health, accident and third-party liability risks for the duration of the seminar.

Application for admission to the Fifth International Seminar on Port Management in the Netherlands

to be held at Delft/Amsterdam/ Rotterdam

April 14~May 17, 1969

please use typewriter

surname and initials:

date and place of birth:

nationality:

address for correspondence: degrees and qualifications obtained, with name of university and date of graduation:

(if you do not have a university

The Americas

education, you are requested to give a survey of your educational background on a separate sheet) knowledge of english (to be listed as fair, good, excellent):

who should be charged for your fees?:

please state on a separate sheet your occupation(s) after graduation (kind of work, place, duration) and explain—in about 100 words—why you wish to attend the course. place, date and signature.

this application to be addressed to: The Registrar

Netherlands Universities Foundation for International Co-operation

27, Molenstraat

THE HAGUE, Netherlands

New Terminal, Toronto

London:—The Toronto Harbour Commissioners will spend almost \$1 million for a new freight terminal and dock area to handle ocean freight export-import containers. The commissioners hope to have the terminal in operation by the summer of 1969.

Plans are being drafted for a consolidation terminal of between 75,-000 and 100,000 square feet. It will be located adjacent to Pier 51 near the Eastern Gap entrance to the harbour. Cost of the building is expected to run between \$800,000 and \$900,000.

Purchase of a rubber-wheeled mobile gantry crane is also being studied. This type of shore-based loading and unloading gear can handle containers of up to 40 ft. in length and weighing more than 40 tons.

The terminal will be situated away from the water's edge giving container-handling vehicles room to manoeuvre. The building will provide container packing and unpacking services and serve as a centre for distribution of fully loaded import containers.

The commissioners now operate five foreign freight terminals at full capacity during the eight-month navigation season on the St. Lawrence Seaway. Three of these terminals have 100,000 sq. ft. of floor area each; the other two have about The Port of Toronto is the largest Great Lakes port in terms of imported general cargo throughput. The decision to proceed with the terminal, despite competitive container developments in the ports of Montreal, Quebec, New York and either Halifax or Saint John, represents a change of policy on the part of the commissioners.

TALKS UNDER WAY

Only a few months ago port officials said that if shipping lines indicated a willingness to use a container terminal, it would be provided. No steamship lines serving the Great Lakes have revealed plans for a regular container service into Toronto or Hamilton that might use the proposed new terminal. However, discussions are under way.

Earlier this year the port took delivery of a top-lifting container handler that will carry and stack 20-ft. containers two high. Terminal services will be administered by the commissioners, and members of the International Longshoremen's Association, which represents the port's work force, will handle container stripping and packing operations.

The port's general manager, Mr. E. B. Griffith, has made several trips abroad this year to canvass foreign shipowners and freight forwarders on their requirements in the Toronto area. European forwards indicated a need for such a terminal and service. Japanese forwarders indicated that, while they have no immediate plans for shipping containers into Toronto, such a development is possible in the future.

To increase use of its existing freight terminals over the winter months, when the port is inaccessible by water, the commissioners have been providing forwarders with an unpacking and warehouse service. (Lloyd's List)

Agents Retained in N.Y.

Charleston, S.C.: — The South Carolina State Ports Authority has retained the firm of A. J. Corbett and Sons in New York to solicit and promote cargo shipments in New York and the northeastern area.

For several years, the Ports Au-

thority maintained its own sales force in New York and Chicago, but phased out these offices with the installation of a direct-dial WATS telephone system to handle inquiries from shippers.

The continuing increase in port business now requires, in addition to the WATS system, the hiring of a representative in the New York area.

The firm is a partnership between Andrew J. Corbett, a veteran of some 35 years in the shipping business, and his son, Andrew J. Corbett, Jr.

The office will be staffed fulltime, including clerical assistance, at 17 Battery Place, New York.

The senior Corbett graduated from the School of Business at Manhattan College in 1934 and entered the shipping business with United Fruit in terminal operations. In 1940, he left to join Moore-McCormack as assistant pier superintendent. He was promoted to pier superintendent in 1946, and superintendent nine years later.

With 28 years experience in stevedoring, traffic, and terminal operations, he opened his own firm in 1962.

Mr. Corbett is experienced with Great Lakes, East Coast and Gulf ports trade, and is very familiar with Charleston and South Carolina ports, as well as competitive ports in neighboring states. (South Carolina State Ports Authority)

Board Notice

Los Angeles, Calif.:—Mr. Frank C. Sullivan attended his first meeting of the Board of Harbor Commissioners on December 4, 1968, following his confirmation by the City Council as a member of that Board. Commissioner Sullivan was appointed by the Mayor to fill the vacancy of Mr. Victor M. Carter. The term of office will expire July 1, 1969.

Mr. Robert A. Day's reappointment to the Harbor Commission was confirmed by the Council for the term ending July 1, 1973.

The Officers of the Board of Harbor Commissioners are:

PRESIDENT: Mr. Taul Watanabe

PORTS and HARBORS

VICE PRESIDENT:

Mr. Robert A. Day The other Members of the Board are:

Mr. Gordon G. MacLean Dr. Robert Fenton Craig Mr. Frank C. Sullivan (Board of Harbor Commissioners, City of Los Angeles)

1967 Tonnage

Houston, Texas: — Tonnage at the Port of Houston in 1967 exceeded 58 million tons according to a statement just released by the U.S. Army Corps of Engineers. The movement was divided between 23.8 million tons of dry cargo and 34.5 tons of petroleum and chemical products liquid cargo.

At the same time, figures from the Bureau of the Census in the Department of Commerce for 1967 showed a foreign trade movement of nearly 14 million tons through the Port of Houston with a value approaching two billion dollars.

The Department of Commerce figures showed imports in tanker vessels of nearly one million tons and imports in dry cargo ships of nearly 2.7 million tons, for a foreign trade import total of 3,632,344 million tons valued at some \$570 million.

On the export side, tanker vessels carried out nearly three million tons and dry cargo ships carried out more than 7.1 million tons with an aggregate value of some \$1.325 billion.

In specific figures, total foreign trade came to 13,781,303 tons valued at \$1,894,234,166. (Port of Houston News Release)

Norfolk, Container Port

Norfolk, Va.: — Although maritime experts differ in their opinions about whether Norfolk or Baltimore is to become the East Coast's No. 2 container port, a Norfolk-based ship line expects to profit regardless of the outcome.

Norfolk Baltimore & Carolina Line, Inc., is an example of a firm which stands to reap rewards from the container revolution by moving the metal boxes by barge and ship between the ports of Norfolk and Baltimore.

Port of Los Angeles



Lights aglow at the new East-West Container Terminal at the Port of Los Angeles symbolize the near-constant work by which the Harbor retains its 45-year leadership as West Coast's "Cargo Capital". Mayor Sam Yorty has announced a new all-time high in cargo-handling at the Harbor for the fiscal year ending last June 30.

Established in 1923, the line transports about 125 containers a week, using two ships and a barge to meet the schedules of containership and truck lines.

The essence of containerization is the ability to move cargo quickly. Containerships operating between Europe and the United States normally have only two or three ports of call in this country, to save time, and few lines include Norfolk and Baltimore as ports of call.

NBC Line is capitalizing on this by moving containers to the port specified on the bill of lading regardless of the ports of call.

If a containership stops at Norfolk with containers destined for Baltimore, the line barges the containers to Baltimore for the shipper. The barge might carry either empty containers or loaded containers on the return trip for Norfolk International Terminals or Portsmouth Marine Terminal.

According to Hal G. Williams, president of NBC Lines, the service helps both ports. "In other words, the steamship operator feels he can make the ports which he has to make and still get the containers to the other port," Williams said.

The containers, both the 20 and 40-foot variety, move on a 325-foot barge which makes two round trips a week.

But the line has two ships—the Virginia Clipper and the Maryland Clipper — which are used to carry containers that ride piggy-back aboard the wheeled chassis to trucks on the vessels.

Often the truck cab is waiting at dockside when the ships arrive and quickly hook up with the chassis for a drive to the container's destination.

One of the ships leaves Baltimore and the other Norfolk, daily, except for Saturday and Sunday.

NBC lines is the only line offering container transfer service of this type between Norfolk and Baltimore and one of few of its type in the nation.

The service began in 1961 when,

29

Asia-Oceania

Oakland Has Paceco System



according to NBC Line Board Chairman Lee G. Hogshire, the line was only moving one or two at a time.

The volume of business has increased markedly during the last six months, according to NBC officials. "We have moved as many as 200 or more containers a week," Hogshire said. (Virginia State Ports Authority Far East Bureau Tokyo)

Port Computer

Melbourne: — Among the thousands of tons of cargo which passed through the Port of Melbourne last month was a consignment from SYSTEMATIC---The Port of Oakland, largest container port on the Pacific Coast, is the first West Coast port to employ the "total container terminal system" concept engineered by Paceco, a division of Fruehauf Corp., Alameda, Calif. The continuous-flow system employs specialized transfer and conveyance modules to speed movement of containers between ship and terminal yard. It consists of the pierside "Portainer" crane (top) for high-speed loading or unloading, low-cost flatbed trucks, and two mobile vard cranes known as "Transtainers" (bottom). The flatbed trucks are a fast, economical means of conveying containers from the "Portainer" to the terminal There, the versatile "Transtainer" transfers containers from flatbeds directly to rail car and road haul chassis, or stacks them five rows wide and three high in the storage yard. First East Coast port to utilize this system was Norfolk International Terminals. (Paceco, January 10, 1969)

England for the Port Authority itself, which will make significant changes in the port management system.

The cargo was a 1901 ICT computer which was landed from the freighter "Nottingham", and which was installed ready for programming a fortnight later.

The computer is geared to work in association with a punch card system, and comprises a central processor with an 8,000 word memory; a console typewriter; a 300 cardper-minute reader; a 300 line-perminute printer; a magnetic tape unit with four casette tape stations.

The arrival of the computer marks a major stage in the Port Authority's four year project designed to introduce an improved management planning, reporting, and control system, as well as improved accounting procedures and systems.

For the past two years, Port Authority personnel have been undergoing extensive training in programming, data processing and systems analysis pending the arrival of the actual computer.

The first application of the elec-

tronic data processing will be an analysis of imports and exports by commodities and countries which have been produced to data by a 40 column punched card installation.

From 1st January 1969, a system of management reporting by responsibility areas will be produced by the computer, and between now and the end of December the computer will also be used to systemstest all programmes that have been written to produce the information. The new system will facilitate the preparation of reports detailing expenses incurred by each area, and provision has been made in computer programmes for matching the expenditures against pre-determined budgets.

Other programmes have also been written for improved accountancy procedures and systems.

On completion of the phase 1 of the computer project in March 1969, it is planned to load stores accounting on to the computer while the preparation of payrolls by computer will also be examined. (Melbourne Harbor Trust Port Gazette, November 1968)

Growing Trade Value

Hong Kong, October 17:-Hong Kong's domestic exports for September are valued at \$871 million, representing an increase of \$271 million or 45 per cent over September 1967, according to provisional figures for the Colony's external trade released by the Census and Statistics Department today. The value of imports at \$1,073 million shows a rise of \$388 million or 57 per cent while the value of re-exports at \$174 million has increased by \$40 million or 30 per cent when compared with September of last year. Commenting on the remarkable September trade figures, the Deputy Director of Commerce and Industry, Mr. E. I. Lee said: "They revealed a continuing high demand in overseas markets for Hong Kong's domestic exports, and the ability of industry to meet that demand." He also noted that the rate of increase in the value of imports in September

Coal Loaders at Balmain, Sydney

At Balmain, in Sydney, recently these two coal loaders, each with a capacity of 500 tons an hour, put 40,000 tons of seam coal aboard the M. V. MICHIGO MARU in 50 hours. The shipment was the biggest single export order ever from the Western coalfields of New South Wales. The coal came from the Lithgow mines of Slater, Walker Securities (Australia) Ltd. (Ronald Plater)

reflected a strong parallel demand for raw materials and purchases of capital equipment. Mr. Lee added: "The very large apparent increase (51 per cent) in the value of imports in the last quarter (July to September) derives in part from the low value of imports from China for the same period last year." (Hong Kong Government Information Services)

Nuclear Port

Tokyo:—Construction of a base port and other preparations are under way for operation of Japan's first nuclear powered ship.

The keel of the vessel was laid Nov. 27 at the No. 2 Tokyo Works of Ishikawajima-Harima Heavy Industries Co. and the ship is slated to be completed in 1972. The Japan Nuclear Ship Development Agency purchased last March an 80,000-square meter site at Mutsu City, Aomori Prefecture, for construction of the base port for the vessel.

The order was placed with Kajima Construction Co. in March. The pier will be 175 meters long and eight meters deep. Construction of the pier is now under way and is to be completed in August 1969.

The pier will be equipped with a 75-ton capacity crane for final rigging of the vessel. The crane is scheduled to be available for use around June 1970.

The hull now under construction at the Tokyo Works is due to be launched in June 1969 and delivered to the agency in May 1970. Asia-Oceania

Portland

Seattle

The hull will be towed to Mutsu City for installation of a reactor and other equipment at the pier.

The agency is asking the public to choose a name for the nuclear ship. (Shipping and Trade News)

Container Cranes

Tokyo:—A pair of 30 long ton container cranes made by Hitachi, Ltd. has recently been installed at the Port of Seattle. The two units will be used primarily for loading and unloading of containers, but can also be fitted with grab buckets to handle bulk cargo.

The container cranes, exclusive of the spreader beam, were manufactured at the Kameari Works.

The two mammoth cranes have their own diesel power generating units. This eliminates the need for an external power source and gives the cranes maximum mobility and efficiency. The hoist of each crane is operated by two motors with a Ward-Leonard control system which permits safe and precise operation throughout the entire speed range of 100/245 f.p.m. The operator's cab is located in the lower portion of the trolley, ensuring good visibility and easy operation. The cranes are of the rope trolley type.

Construction of the two units for the Port of Seattle followed delivery last August of a first 33 short ton container crane to the Port of Portland. Hitachi has recently received an order for an additional 40 short ton unit for Portland.

Specification

hoisting capacity: 30 long tons (exclusive of spreader beam) span: 50 ft.~0 in.

hoisting speed (max.): 100/245 f.p.m.

traversing (max.): 410 f.p.m.

traveling speed (max.): 150 f.p.m.

slewing: 113 ft.~6 in. (seawards)

capacity: 30 ft~0 in. (shorewards)

(Hitachi News Service)

Nationalizing Ports

London:—The British Government announced January 29 that it plans to nationalize all major seaports in Britain.

The announcement marked the Government's latest move to bring most key transport facilities in the country under state ownership. Britain's railroads, most provincial and long-distance bus services, some highway trucking services, most inland waterways and London's subway and bus systems already are state-owned.

The announcement, made simultaneously to Parliament by Minister of Transport Richard Marsh and in an official white paper, said that next fall the Government plans to introduce legislation providing for nationalization of all ports handling more than £5 million of freight a year and will be placed under control of one national ports authority, Marsh said.

Marsh said the principal ports to

Port of Antwerp, Churchilldock

The new bonded warehouses within the background. The container terminals at the Churchilldock.

be taken over are London, Merseyside (Liverpool and Birkenhead) Milford Haven, Medway, Manchester, Clyde, Tees, Hartlepool, Bristol and the Tyne.

Marsh said the new authority also will take over docks and harbors at Hull, Southampton and South Wales, which at present are run by the British Transport Commission, which also operated the country's nationalized railroads.

All the ports Marsh listed already are publicly or municipally owned except Manchester. The new project would bring them all under single state management, Marsh said.

Marsh said the takeover was expected to cost the nation not more than $\pounds 25$ million in compensation to private owners.

The white paper said the ports to be taken over handle about ninetenths of Britain's seaborne trade. In 1967 this totaled 159 million tons of imports and 37 million tons of exports. It said they employ more than 95 per cent of the country's 120,000 longshoremen and other port workers.

Marsh did not say when state takeover would become effective. But he told the House of Commons questioners "it will be sooner than you expect." (Japan Times)

Lord Simon in Curaçao

London:—The Chairman of the Port of London Authority, Lord Simon, delivered the "Keynote Address" on the opening day of the 57th Convention of the American Association of Port Authorities which was held this year in Curaçao from November 11~14.

Among the comments he made. Lord Simon said that in the forty years that he has been interested in ports, greater changes have taken place than in any forty years in the

world's history. The rate of change has been rapidly accelerating "and far the greater part of the changes ... have taken place in the last ten years... The problem which faces port authorities, to adjust their plans against this rapidly changing background, is indeed a challenging one." Lord Simon continued by musing as to what it was that suddenly awakened us all, and awakened shipowners too, to the need for radical change. He suggested that one of the reasons was the "increase in competition, both between ports and between carriers. This has meant... that those who use our ports... are looking out for the best service and most advantageous terms."

The Chairman also considered that the increase in shipowners' costs has had an important effect, highlighting the importance of quick turn-round and the importance of seeking every opportunity to reduce the cost of cargo-handling.

One of the outcomes of the latter has clearly been the rapid development of the container and other unit-load systems.

Lord Simon turned his remarks to another great change that has made its impact felt in every port of the world-the change in outlook of dock labour. He said: "... the demand, and I believe it to be a very right and proper demand, for the employment of dock labour under conditions just as good as the employment of other industrial labour, will have to be met. This ... brings very serious problems for us. It cannot be pointed out too often that you can decasualise the employment of labour, but you cannot decasualise the movement of traffic." He added that working out a system effective and economical both when trade is at the peaks and in the troughs, is not an easy task. "We have as much interest as anyone in ensuring that dockside operations are carried out efficiently and economically and we are as hard hit as anyone if industrial relations break down."

Lord Simon had said earlier in his address that ports can no longer stand by themselves; they "must be regarded as parts of an integrated transportation system". He concluded by taking this thought a step further, saying: "For an efficient transportation system, of which the ports form an essential part, can, in one direction, make aid go further and in the other can bring more cheaply to the affluent markets of the world the produce of those who need our help, and to ensure them a better price. Let us-members of the Association and your guestsin the discussions that will follow, remember that." (The PLA Monthly, December)

Port Staff Training

London, Jan. 14:-The second course in the first training scheme in Britain designed to prepare supervisors and dockers for the cargo handling techniques of the container age began at the British Transport Docks Board staff college, King's Lynn this week. The course was developed from an experimental course run by the Docks Board in co-operation with the National Dock Labour Board last November. The scheme breaks new ground in training in the port industry in Britain by following a period of intensive study of the theory of modern cargo handling operations at the college with a full week of practical work at the port of Hull, where specialised unit load services are handling about a million tons of cargo a year. This practical work includes simulated exercises in the N.D.L.B. Training Centre in support of studies carried out on the docks.

"To appreciate the importance of this series of courses one need only consider the position of port operating staff faced with entirely new operations and techniques for which different handling methods are necessary," Mr. Leslie G. Taylor, the Docks Board training and education officer, who himself holds the Merchant Navy's Extra Master's certificate, commented yesterday. "Long experience of traditional methods is of little value in these circumstances; and without prior training staff must learn as they go along.

"The term 'container age' has

come to be regarded as a hackneyed one, but for the men on the dockside it has brought a revolution," Mr. Taylor continued. "The fund of cargo handling knowledge built up over the centuries and passed on from generation to generation is being superseded—and superseded very rapidly. It is up to the industry to match in its training effort the very great advances which it has made in port development over the last few years."

Sixteen men, ranging from assistant dock superintendents, supervisors and foremen, to registered dock workers and Dock Labour Board instructors, attended the first, experimental course in November. Of the 16, nine were Docks Board staff and seven represented cargo handling companies, the N.D.L.B., and the Port of London Authority. A great deal was learned from the experiment, as a result of which the coming course, and another in May, will include more case study work at the Staff College and introduce fieldwork at King's Lynn docks for a comparison of medium and large port operation.

A further 17 port operating personnel, including a traffic supervisor from Malaysia have been enrolled for the January course, which will be given lectures by Docks Board officers and other lectures of marine background on such subjects as future trends in relation to unit cargoes and container development; economics of ship turnround in ports; and future trends in cargo transportation and handling activities. The course will close with an open forum attended by both Docks Board and N.D.L.B. officers.

With these courses as a first step in an area as yet insufficiently covered in the industry, the Docks Board feels that it has set a pattern of training which, linked with the facilities of the National Dock Labour Board, can be extended for the benefit of the whole port industry. (British Transport Docks Board)

Record Timber Imports

London, Jan. 14:-Timber imported into Goole during the year

1968 was a port record for the third year running, the British Transport Docks Board announced today. For the first time ever, the total exceeded 100,000 tons. 154 cargoes totalling 108,601 tons were dealt with in the year, in addition to which a few small consignments arrived on the general cargo liners to bring the total to 109,773 tons.

The previous annual record tonnage was 92,441 tons in 1967. The improved 1968 total shows an increase of 17,332 tons (18%). The largest cargo of the year was 1,404 tons in the m.v. "Nordkyn" in January, while the heaviest month was August when 19 vessels arrived with 14,238 tons.

Most of the timber was loose softwoods, only a small proportion being packaged or bundled. The principal importers of the timber are based mainly in the East and West Ridings of Yorkshire and in the Midlands. All the timber was from either Baltic ports or from Russian White Sea and Kara Sea loading points.

The provision by the British Transport Docks Board of eight new $71/_2$ -ton quay cranes at a cost of £230,000 supplemented by a fleet of 10-ton mobile cranes, and the wide use of stillages by the stevedores have considerably facilitated discharge of the cargoes, to keep pace with the increased tonnages. (British Transport Docks Board)

Goole Ships More Coal

London, Jan. 14:—Coal and coke shipments from Goole Docks in 1968 totalled 1,371,758 tons, a 14 per cent rise on the 1967 figure, say the British Transport Docks Board. They included export cargoes to the Faroe Islands and Gibraltar, as well as to Scandinavia and the Continent.

Tonnages of both coastal and export shipments showed increases. Foreign exports benefited from devaluation and coastwise shipments improved through increased tonnages taken by the South Eastern Gas Board.

"The S.E.G.B.'s fleet of 2,800-ton 'flat irons' (the vessels specially designed to navigate Thames bridges) are the biggest colliers ever to have made regular use of the Goole coaling appliances," said a Docks Board spokesman, "and these vessels can load at either the rail or the compartment boat hoists. Of the total shipped last year, 506,365 tons were of canal-borne coal loaded by the unique compartment boat system."

The largest coal cargo shipped from Goole last year was 2,525 tons in the motor vessel **Corbrae** in November. There has been a considerable trend to larger vessels during the year and 150 cargoes were over 2,000 tons, with a few just topping the 2,500-ton mark. (British Transport Docks Board)

More Unit Load Cargo

London, Jan. 9: — Provisional figures for operations at the port of Hull during 1968 indicate that the tonnage of container and other unit load cargo handled by the port passed the million-ton mark, say the British Transport Docks Board. This represented an increase of about 50 per cent over the 1967 figure.

It is also anticipated that the final figures for 1968 will show that Hull handled 8 per cent more export general cargo compared with the previous year, with notable increases in machinery, textiles, iron and steel, and miscellaneous goods exported. This rise will help to offset the decline of coal exports following the cessation of coal shipments from Hull in the first half of 1968.

The port's specialsed roll-on/rolloff and unit load services provide 23 sailings each week to Continental ports. Besides making Hull one of Britain's boom ports for unit load traffic, they have also brought it into prominence as a passenger port. The number of passengers passing through Hull rose from 148,596 in 1967 to 160,000 last year; before the introduction of the ferry services three years ago the average number of passengers in a year was about 28,000.

The Docks Board expect the growth of unitised traffic at Hull to continue during 1969 as the benefits of the unit load concept become more widely appreciated, and more shippers make use of the existing services. To meet the anticipated future demand for container facilities, a deepwater container berth equipped with a 40-ton transporter crane is being provided in the new $\pounds7$ million extension to King George Dock which the Docks Board will be bringing into operation shortly. (British Transport Docks Board)

Cardiff Docks

London, Jan. 14:—Following a record total of car exports from Cardiff Docks to North America in 1968, the British Transport Docks Board said today that the port is expecting this week to deal with its third large shipment of export cars so far this year.

During 1968, a total of 27,338 dollar-earning vehicles, including tractors, caravans and buses in addition to 26,459 cars, have left Cardiff for North America. Total U.K. car exports to the U.S.A. for 1968 are estimated to number approximately 98,000.

Commenting on the Cardiff figures in a record year for the British motor industry, Mr. H. Boyle, transport and shipping secretary of the Society of Motor Manufacturers and Traders, said "The port has done a good job."

Two consignments, totalling 2,092 cars, have been shipped from Cardiff so far this year. They were loaded aboard the motor vessels **Mosdale** and **Belanthony.** Further bulk shipments totalling 2,200 cars are expected this month.

"Although 1968 was a highly successful year in this field," said Mr. J. B. Williams, the Cardiff Docks Manager, "Cardiff still has the capacity and know-how to handle far more of these bulk car shipments. Car manufacturers based in the Midlands and London have become increasingly aware of the excellent facilities and service that Cardiff has to offer.

"We have three first class berths each with its own assembly area, capable of accommodating 5,000 cars. The port workers are skilled in our method of handling which ensures a rapid and efficient turnround of shipping. 1969 has started on a high note and I am optimistic

that this trend will continue throughout the year." (British Transport Docks Board)

Bremen News

• Bremen enjoys a supreme position as the cotton import centre of the Federal Republic. This is not only documented by the cotton-exchange of the Hansa city; it has, above all, also been reaffirmed from the developments of the 1967/68 cotton year just ended-whereby it was shown that the port of Bremen was able to consolidate its leading position as the most important German handling centre. In 1967/68 the total cotton imports of the Federal Republic amounted to 291,666 tons, of which 74.4% came via the Bremen ports. Thus Bremen was able to improve her position once again, in that the figure in the previous season was 71.7%. Bremen, in handling some 1.2 million bales, is (after Kobe with 1.3 million bales) the secondlargest cotton import centre in the world.

• Ocean cargo handled in the Bremen ports in the first nine months of this year were, with 13.84 million tons, one million tons in excess of the figure for the same period in the previous year. Of particular note is the fact that general-cargo handling increased by 700,000 tons to 7.7 million tons. This represents an increase of 10%. Bulk cargoes handled increased by 300,000, to 6.1 million tons—an increase of 5%. The proportion of general-cargo, to the total cargoes handled, increased from 55% to 56%.

• We had not found it possible to date to obtain from other ports exact figures on container handling; we reported this in September when we detailed precise information on the sweeping container upsurge in Bremen. We are today able to append an exception: Antwerp, like us, publish container handling information in four languages. These figures show that the Belgian port is slightly ahead of Bremen in total container traffic and somewhat behind in the Atlantic—trade. Incidently since October Antwerp possesses seven container bridges. (Bremen Air Mail)

Truck-to-Truck Method

Hamburg: — The truck-to-truck method, successfully introduced in Hamburg in various sailing areas, has now been tried out in the outward bound Far East service. MS "Asmara" of the Danish Ostasiatiska Kompagni took over a test consignment of 4,564 cartons of tinned milk, weighing 76 tons and stowed on 119 shipper's pallets, which had arrived by coastal motorship from Esbjerg.

The transit goods were placed on board in little more than an hour through the side port of the freighter by means of two fork lift trucks each ashore and in the hold.

The truck-to-truck procedure is to lead to further rationalization in shipments to the Far East. The necessary prerequisites in the Port of Hamburg have been provided by three Scandinavian shipping companies and the Hamburger Hafenund Lagerhaus-AG. (Ship Via Hamburg)

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