

Port Pricing and Cargo Handling in Port of Portland
and Implications for Somalia's Port System

by

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Internship Report

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Internship Report:

Pricing and Cargo Handling in the Port of Portland (POP) and Implications for Somalia's Port Authority

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Introduction

This report is an exposition of an eleven week training internship in the Port of Portland (POP). My interest in serving an internship at POP came as a result of a field trip in the spring of 1980 during which I was fascinated by the ports operations and diversity. During the internship I was exposed to various aspects of port activities, including methods of port pricing and modern techniques of cargo handling in the marine terminals.

The main purpose of this internship was two-fold: firstly, to generally acquaint myself with the many facets of port operations and secondly to develop an insight into the following specific areas of interest:

- o Port tariff and the pricing of port services and facilities, and
- o Break-bulk and container handling.

This report is divided into three parts:

1) Port Pricing:

Special consideration is given to the port pricing and factors that might influence it, e.g., competition, community subsidy and the policies of the organization. Since appropriate pricing for port services is the cornerstone for a port's ability to recover costs and thus operate efficiently, pricing principles deserve this special attention.

2) Cargo Handling:

The success of tariff implementation depends on, among other

things, the quality of port services provided. Therefore, in this section the port's cargo handling is explored in addition to the effects of labour relation on the port's productivity.

3) Internship Implication to Somali Ports:

The organizational structure and the existing problems of the Somali ports are outlined. The knowledge gained from the internship experience will provide the expertise for solving some of the numerous problems confronting the Somali Port Authorities.

This report was compiled from a) observations of port operations, b) personal interviews with port authorities, steamship agents, ship captains, and c) a literature search for relevant materials in the libraries of the Port of Portland, Portland State University, and Oregon State University.

This discussion is not meant to give a complete picture of all underlying policies of pricing method or cargo handling in POP, because time and resources are not adequate. Also, it is apparent from this study that there are no easy solutions to Somalia's port problems. However, this report may serve as a starting point to explore these problems and their possible solutions.

I. Port Pricing

A. Pricing objectives of POP

The POP has multiple pricing objectives. These objectives are very clear from the pricing system stipulated in the POP tariff book which states:

"Tariff revenues should first recover out-of-pocket operating and maintenance costs and secondly should provide a reasonable and measurable return on capital investments with consideration of community benefit and community subsidy factors."¹

The port's pricing objective is highly influenced by the port's principal mission which is to develop ocean-borne trade as well as the community's economy.² This principal assignment is one of the factors why, in many cases, the port facilities and services are rarely priced on a commercial basis.

The port's policy in achieving this principal mission is a discretionary pricing policy in which the port charges are lowered in order to bolster the local community but are raised when it has an edge on competition. Such discriminatory policies in port charges have not generated enough revenue for the port to operate at break-even (this can be seen from the cash flow, Table 1). For this reason, the port receives community subsidy by direct taxation and obligation bonds.

B. Pricing method in the Port of Portland

1. Tariff Establishment:

In establishing a tariff or modifying an existing one,

COMPARATIVE SUMMARY OF OPERATIONS

The Port of Portland

Year Ended June 30, 1980

	Revenues	Expenses (Excluding Depreciation)	Operating Income (Loss) Before Depreciation	Depreciation	Operating Income (Loss)
Marine Terminals	\$27,217,973	\$23,362,511	\$ 3,855,462	\$ 3,080,359	\$ 775,103
Ship Repair Yard:					
Existing Facilities	3,442,557	2,491,214	951,343	697,697	253,646
Dry Dock No. 4	5,518,709	3,570,978	1,947,731	1,859,006	88,725
Total Ship Repair Yard	8,961,266	6,062,192	2,899,074	2,556,703	342,371
Dredging Operations	4,729,764	4,451,441	278,323	327,789	(49,466)
Steamer PORTLAND	405,340	318,234	87,106	27,477	59,629
Marine Marketing and Administration	14,843	2,317,670	(2,302,827)	9,274	(2,312,101)
Total Marine Facilities	41,329,186	36,512,048	4,817,138	6,001,602	(1,184,464)
General Aviation	526,639	517,723	8,916	329,094	(320,178)
Economic Development	667,586	833,024	(165,438)	21,013	(186,451)
General Development, Management and Administration	155,972	169,689	(13,717)	177,803	(191,520)
Total All Operations Except Portland Inter- national Airport	42,679,383	38,032,484	4,646,899	6,529,512	(1,882,613)
Portland International Airport	12,665,648	7,866,616	4,799,032	3,524,942	1,274,090
Total All Operations	<u>\$55,345,031</u>	<u>\$45,899,100</u>	<u>\$ 9,445,931</u>	<u>\$10,054,454</u>	<u>\$ (608,523)</u>

Year Ended June 30, 1979

Marine Terminals	\$20,486,976	\$17,523,014	\$ 2,963,962	\$ 2,977,497	\$ (13,535)
Ship Repair Yard:					
Existing Facilities	3,538,087	3,161,563	376,524	739,321	(362,797)
Dry Dock No. 4	1,160,504	749,296	411,208	610,535	(199,327)
Total Ship Repair Yard	4,698,591	3,910,859	787,732	1,349,856	(562,124)
Dredging Operations	80,644	502,975	(422,331)	16,230	(438,561)
Steamer PORTLAND	213,824	273,650	(59,826)	9,782	(69,608)
Marine Marketing and Administration	1,224,071	3,798,627	(2,574,556)	12,027	(2,586,583)
Total Marine Facilities	26,704,106	26,009,125	694,981	4,365,392	(3,670,411)
General Aviation	436,244	398,981	37,263	282,656	(245,393)
Economic Development	661,300	633,825	27,475	5,892	21,583
General Development, Management and Administration	192,840	179,079	13,761	161,998	(148,237)
Total All Operations Except Portland Inter- national Airport	27,994,490	27,221,010	773,480	4,815,938	(4,042,458)
Portland International Airport	12,229,797	6,949,164	5,280,633	3,174,613	2,106,020
Total All Operations	<u>\$40,224,287</u>	<u>\$34,170,174</u>	<u>\$ 6,054,113</u>	<u>\$ 7,990,551</u>	<u>\$ (1,936,438)</u>

F.e. 1

detailed cost estimation is undertaken by the Department of Traffic and Regulatory Affairs (TRA). This cost estimation is characterized by a thorough analysis of all the cost components and processes including labour, equipment, and other port facilities. Cost estimation is also characterized by intensive research, use of past records, quotations, calculations, and constant consultation with terminal operators.

The processes of cost estimation are generated at the terminals, based on actual sampling of port services (e.g., handling cost of a ton of timber). The initial estimate is passed to the TRA which adjusts the estimate according to other direct and indirect costs and in accordance with the prevailing regional competition. In order for the TRA to arrive at an accurate price, as well as a competitive one, the Department takes great pains to review changes in the cost of labour, the changes in the efficiency of labour, equipment utilization, and the changes of other factors that might influence port costs.

The TRA is closely intertwined with the marketing department. These departments, in collaboration with the Research Department (which constantly monitors the expected traffic volume, price and service quality of other competing ports) insure that the port's price rates are applicable and responsive to market competition.

2. Tariff Structure and Revenue

The port's rate structure is based on a cost-rate system which directly relates cost and rates to the use of or benefits from the terminals. This cost-rate structure identifies and dis-

tributes costs equitably to port users.

This cost-rate system establishes two major classes of costs, namely: facility costs and service costs.³ Each tariff rate is attributed to one of these major costs. These two costs are then distributed to vessel and cargo by segregating each type of terminal operation into the following:

a. Facility Costs:

The facility costs of the port are recovered by means of dockage rate, wharfage rate or other facility rates. The charges on dockage rate are levied against the vessel while the wharfage rate is charged on the cargo. The other facility costs are shared equally by the vessel and the cargo on a 50-50 basis.

The facility rates on dockage, wharfage and other facility rates are intended to recover the following elements of the port costs:

- 1) return on investment, i.e., land, wharf, terminal construction buildings, light equipment and major port improvements;
- 2) depreciation;
- 3) general maintenance; and
- 4) a share of overhead (terminal and administrative overhead).

The facility rates provide the basis for the recovery of out-of-pocket expenses and optimum revenues for return on capital investment and depreciation.

b. Service costs:

Service costs consist mainly of operating labour expenses and rental of heavy equipment at the terminals. The service costs,

unlike the facility costs which are fairly stable, frequently change due to the labour cost element which changes frequently; this is one of the main reasons why facility costs are segregated from the service costs.

Service costs are aimed to cover:

- 1) direct operating labour expenses,
- 2) rental of heavy equipment, and
- 3) a share of terminal overhead and other indirect expenses.

The service rates are recovered from the party for whom the services are performed. The cost-rate system has the advantage of simplifying the pricing procedures by relating identified costs to rates so that their direct relationship can be easily understood by port clients, as well as by port administrators.

The port rates are published in the port tariff book which is a reference for port clients and other ports that are members of the North West Marine Terminal Association who are bound by price agreements.

C. Price Agreements by the West Coast Ports:

The POP is a member of the North West Marine Terminal Association (NWMTA), which is an association of Northwest ports (created in July 1939) to stabilize port prices of its members. The origin of the NWMTA was based on the premises that unhampered price competition would drive some port out of business, resulting in an economic disaster to local communities. Price wars, according to port authorities, serve the interests of no one; therefore, price agreements are desirable.⁴

Generally, price agreements fall into the three categories listed below:⁵

- 1) Common or fixed agreements: the prices of some defined goods or services are specifically fixed by the group.
- 2) Minimum price agreement: a floor price is established for the product.
- 3) Maximum price agreement: a ceiling price is provided for the product.

The NWMTA price agreements fall into the second category in which the ports in the Northwest meet frequently (usually at least six times a year) to discuss the existing port charges and to establish a price floor for the common services they provide. The parties to these price agreements do not lose their independence completely. They remain free to choose any price provided they submit 30 days notice prior to rate changes. Nevertheless, due to the present competitive structure, no party member can unilaterally change its tariff rates. For example, if California ports desire to increase their wharfage rate, they can do so, but they will not act unless the other Northwest ports agree to the same action. If they act alone, they are put in a disadvantageous competitive position. Similarly, a unilateral decrease in rates will trigger a price war. Furthermore, any member of the NWMTA has the right to protest any actions through the Federal Maritime Commission which regulates all the activities of the marine industry. Whether this price agreement is a tacit collusion designed to accommodate the high operating costs of inefficient ports with obsolete facilities, or whether it is in the

public interest to stabilize prices, is questionable. Thus far, the Northwest ports have been loyal to their price agreements and this has resulted in the smooth operation of these ports.

II. Cargo Handling in Terminals Four and Six

A. Terminal facilities

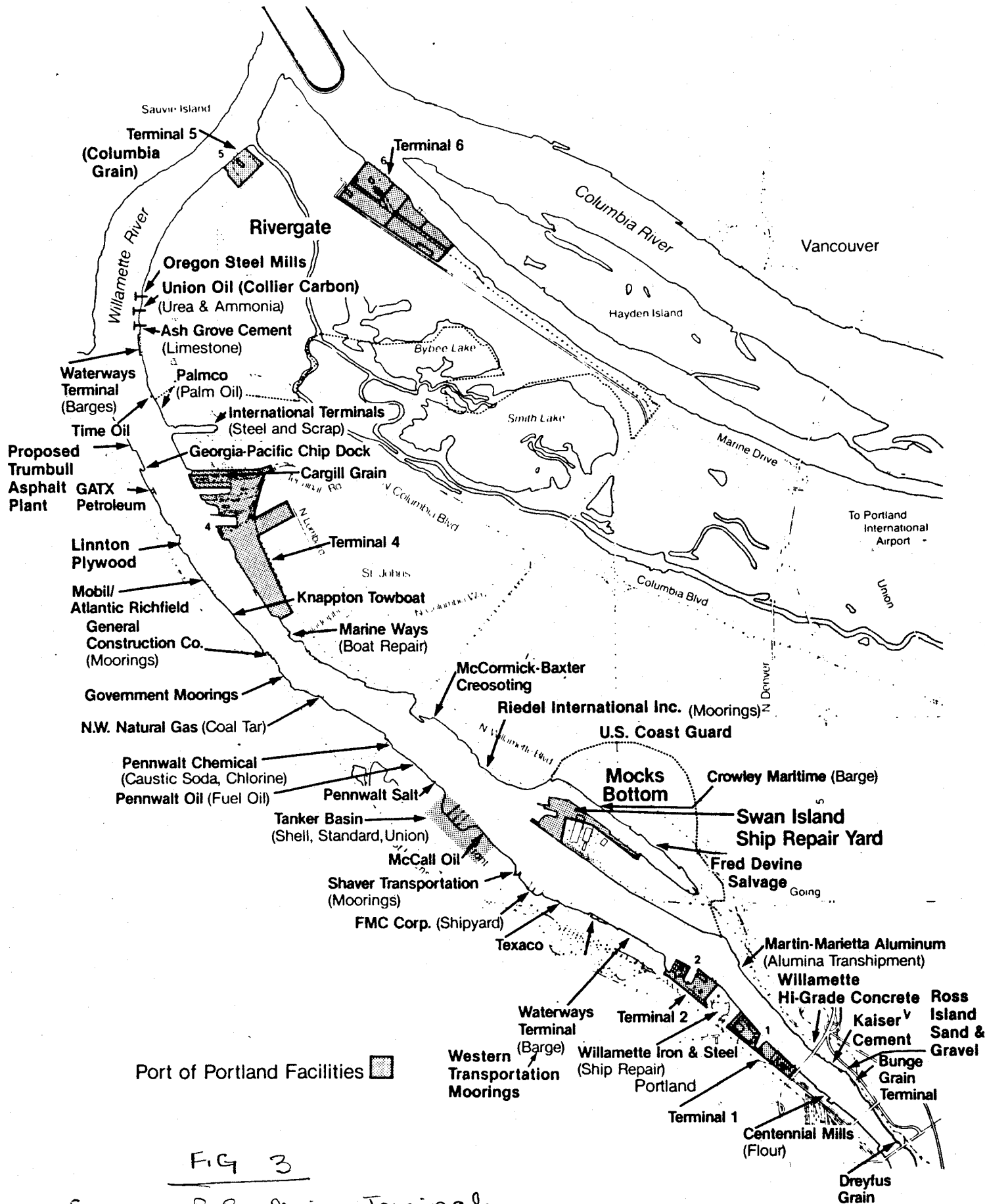
Of the five marine terminals, Terminals four and six are the busiest of all and are characterized by the diverse activities in which they are engaged. Terminal 4 is described as a port within a port because of its diversity of operations. Terminal 6 is exclusively for container handling and auto importing.

1. Terminal 4

This terminal is located on the east bank of the Willamette River (see attached map). The terminal handles both break-bulk and container cargo. The cargo operations include special berths for handling steel, log and lumber loading operations, dry bulks and import automobiles.

The terminal facilities include:

- a) two container berths with 33 ton capacity crane,
- b) a grain elevator with 8.1 million bushel storage capacity (with an autoloading capacity of 2500 ton/hour equipped to handle unloading barges, trucks and rail cars),
- c) a log-loading berth with two 36-ton revolving cranes (for lifting logs from a pond directly into a ships hold),
- d) a bulk-cargo berth with a bulk unloader and bulk outloader),



PORTLAND HARBOR

MARINE TERMINALS MASTER PLAN

- e) a utility dock (with a 36-ton revolving crane that handles steel and forest products),
- f) an import auto berth (capable of handling 300,000 vehicles annually), and
- g) a covered warehouse space (570,000 square feet).⁶

The inboard functions at Terminal 4, i.e., the activities involved within the dock and ship premises, are done by a stevedoring company which does the actual job of stowing or discharging the cargo. The stevedores, who carry out the physical movement of cargo, are hired from the Longshoremen union. The port's terminal employees supervise the stevedores. Supervision is executed by the terminal manager and his superintendents and assistant superintendents.

The responsibilities of the superintendents and their assistants include:⁷

- 1) Seeing that all booked or manifested cargo is loaded or discharged,
- 2) noting the condition (with the help of checkers and cargo supervisors) of the cargo on receipt or outturn,
- 3) ensuring that stowage of cargo complies with the Master's or Port Captain's requirements, and
- 4) ensuring that the stevedores' responsibilities are satisfactorily performed.

The terminal handled about 800,000 tons of bulks (including steel) in 1982. This cargo is expected to increase rapidly in the near future (See fig. 3).

2. Terminal 6 (Container terminal)

Terminal six has a 3-berth dock with 2850 feet of total length and 60 acres of parcel area. The container terminal was first constructed in 1974 and expanded in 1980. It has relatively modern facilities and equipment because of its relatively recent construction.

The workhorses of the terminal include:

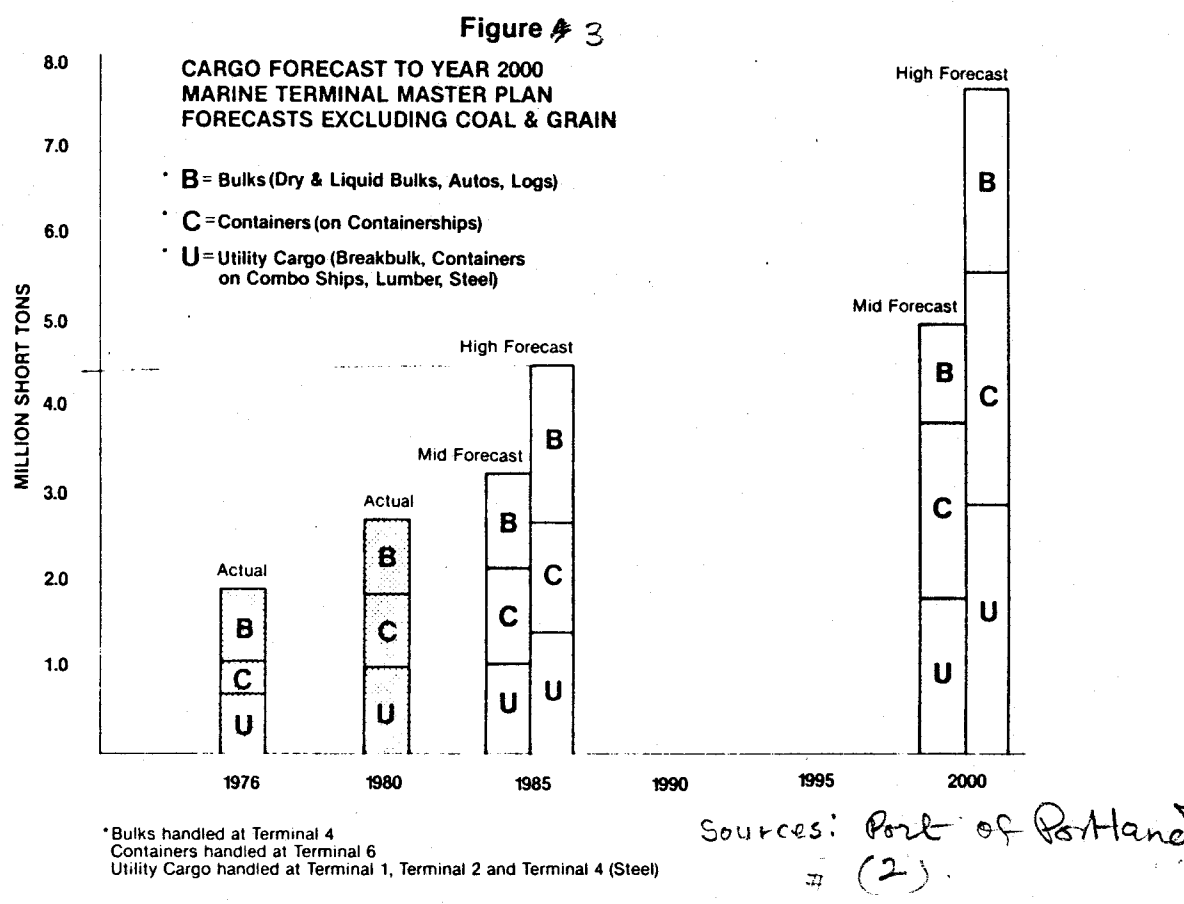
- a) Two 45-ton and two 50-ton Hitachi docksdie cranes equipped with anti-sway devices and telescoping beams which permit handling up to 40 foot containers (average cost $\$1.26 \times 10^6$ each),
- b) nine diesel-electric transtainers, and
- c) a fleet of 21 truck tractors and 61 chassis that move containers within the yard, i.e. yard to ship or from Container Freight Station to yard.⁸

In handling the containers, the actual stevedoring is done by the POP. The container terminal is characterized by cost-efficient handling relative to other west coast ports (see fig. 4), and in 1980 alone, 18,617 containers moved through the terminal.⁹

The year 1980 was not the best year for the POP as it was the year of the Mount St. Helens eruption. Nevertheless, the port had a record increase of 9.4% in cargo handling (excluding grain) over the previous year.

Although the container terminal handling of POP and the overall efficiency of the port is usually reputed to be one of the best on the West coast, it seems that it lags behind some Far Eastern Ports (discussed in the next section).

Fig. 3



	Portland	Seattle	California
Throughput Charge & Equipment Rental, Maintenance, etc.	\$ 79.35	\$110.00	\$100.00
Wharfage	80.00	40.00	50.00
Drayage	-0-	90.00	120.00
TOTAL	\$159.35	\$340.00	\$270.00

Fig. 4 Comparison of container handling charges.

Source: Port of Portland #9.

III. Discussion:

A. Alternative Pricing Methods:

Generally there are two main pricing methods used: full cost pricing and marginal pricing:

1. Full-cost pricing:

This method of pricing, also known as cost-plus pricing, is based on determining the cost components incurred by the port in producing a service and then charging the port user a price that reflects all the costs involved in the production of services as well as a fair return on capital investment for that particular service. Under this full-cost principle, the price determination is reached by calculating the unit cost of port services and facilities. The unit cost is determined by identifying the fixed costs (including marketing and other overhead costs) and variable costs and then simply multiplying the total cost by the number of units produced (when the firm produces only a single product). However, since a port is a multi-producer (i.e. it provides various services) a more complicated task of cost allocation is undertaken by the port authority in which the variable and fixed costs of each service and facility are separately traced. This system of pricing is basically the same as the cost-rate structure in which the POP bases its pricing policies. It has many advantages, as in the words of Heymann¹¹ "it is explainable, understandable, justifiable, predictable, politically acceptable, and properly used it can be salable and profitable." However, this pricing method is criticized as disregarding the demand, market conditions, competitive prices,

growth rate of the market, and the competitor's reaction to price changes. Because of this neglected aspect of this pricing method the port authorities are sometimes forced to bypass the rules of the cost-based pricing method.

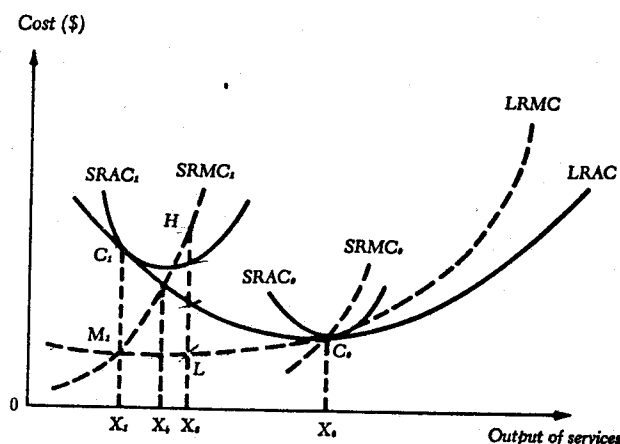
B. Marginal Cost Pricing

Another method of pricing (which the port authorities rarely practice) is marginal cost pricing. This method of pricing is based on pricing the port services on the cost of producing an extra unit of port services. Marginal cost pricing measures the resources used up by supplying a unit of port services. It is an efficient way of ensuring allocation of resources.

It is the short-run marginal cost (SRMC) pricing that is most appropriate in port pricing at all times.¹² The long run marginal cost (LRMC) is suitable only when it coincides with the SRMC and this is possible only when the port's average long run and short run costs are equal (See fig. 5). At that point the port operating costs are minimum. If SRMC and LRMC are equal it is implied that, as Bennathan notes,¹³ "there are constant returns to scale for the levels of traffic for which the facilities have been built."

The SRMC has the advantage of reflecting the demand for port services. It leads to the most efficient use of existing facilities. If there is an unexpected demand for the port services, the SRMC will be high and well above the LRMC (as shown in fig. 5). Charging at LRMC will result in an inefficient congestion. On the other hand, if there is an excess capacity the SRMC is well below the LRMC and is more appropriate as it encourages the use of any existing excess capacity.

1
FIGURE 2.1. COST AND OUTPUT



Note: $SRMC_i$ = short-run marginal cost associated with the i th plant and technology; $SRAC_i$ = short-run average cost; $LRMC_i$ = long-run marginal cost; $LRAC_i$ = curve associated with the i th plant and technology.
From: Bentham and Walters.

Why, then, does the POP rarely price its services on MC which most economists believe can make a port a financially self-supporting enterprise? It is true that MC pricing is best applicable in perfect competition and where demand and cost curves can be accurately determined. It is known that political pressures, state taxes, competition, and subsidies will distort port pricing and also the demand and cost curves are not ascertainable in an accurate manner. In spite of these shortcomings, the inefficiencies that might result by totally ignoring the MC theory are rarely justified.

The aim of pricing policy should be to charge the user for the true cost of the services and facilities consumed, otherwise there is a risk of undesirable cross-subsidization and consequent misallocation of resources.¹⁴

C. The Port Subsidy:

The long-term financial objectives of the POP aim at recovering carrying costs, providing revenue for interest on loans, depreciation of assets on a replacement cost basis, and some margin for reserves to meet contingencies. These aims have never been achieved without community subsidy. The failure to attain such long-term goals is due to the indecisiveness on behalf of the port authorities to price their services on the basis of marginal cost pricing and/or strictly on a cost-plus method whichever might be appropriate.

The authorities of the POP maintain that the existing structure of port operations on the west coast is so competitive that it appears impossible for the port to price its services on a cost basis. Because of this competition, prices of port facilities for handling general cargo are often non-compensatory in order to attract regular services which are sensitive to costs and quality of services.

There are some arguments in favour of subsidizing non-compensatory port operations. The port provides great opportunities for jobs, it attracts a vast range of industries and other subsidiary services which have turned the port district into a major industrial, commercial and banking center. This type of port subsidy justification may be valid under special circumstances, such as during the early times of port operations. Once a port is developed and has attracted substantial traffic, like the POP, there is no reason why it should not be able to earn enough income to maintain its services and facilities on a high and efficient level without relying on a community

subsidy.

Subsidizing a port for the sole reason of competition is probably not justifiable and can be dangerous. Such subsidy will benefit mainly conference shipping lines and private users of the port while the port district residents will be taxed unjustly; competition should be based on quality of services provided by the port.¹⁵

In short, community subsidy for port services is seldom justifiable and in the few instances in which it may be, the subsidies should be related to its social opportunity costs in which the community benefits should at least equal the opportunity costs of resources used to provide these services.¹⁶

D. Efficiency and Competition

The port's competitive stance will depend on its efficiency. Pricing the port services too high or too low will have a negative impact on a public port. Minimized costs and/or higher productivity will boost the port's ability to attract marine shipping.

Increased efficiency of the port can be achieved in two ways: cost minimization and increased productivity. Port costs are made up of fixed and variable costs.

Total fixed costs are independent of the tonnage throughput. However, as the tonnage of the cargo handled increases, the fixed costs, expressed as a cost per ton, decrease. These costs include dredging, capital costs of quays, warehouses, cranes, etc.

Variable costs depend on tonnage throughput. The costs include labour and staff costs, expressed as a cost per ton, are

fairly stable up to full use (optimal capacity) and then rise quite rapidly as port facilities are constrained and congestion recurs.

The average port costs is at a minimum (fig. 6) when the rate of reduction in the fixed cost per ton equals the rate of increase in the variable cost per ton.¹⁷

Another consideration is the cost of ship time in port. These costs are incurred during the time the ship spends at the port and/or during the waiting time for a vacant berth (see fig. 7).

A study made in 1968 estimated that the proportion of a ship's time spent in port was about 60% and the cash cost of handling their cargoes ranges from about 20 to over 30%.¹⁸ It was asserted in that study that the total costs incurred by a ship (fig. 6b) can be reduced by as much as 35% if the turnaround time is reduced only 20%.

B. Port Productivity

The POP has been very successful in minimizing the waiting time for a ship. The waiting time is generally assumed acceptable when the ratio of waiting time to service time is less than 30%.

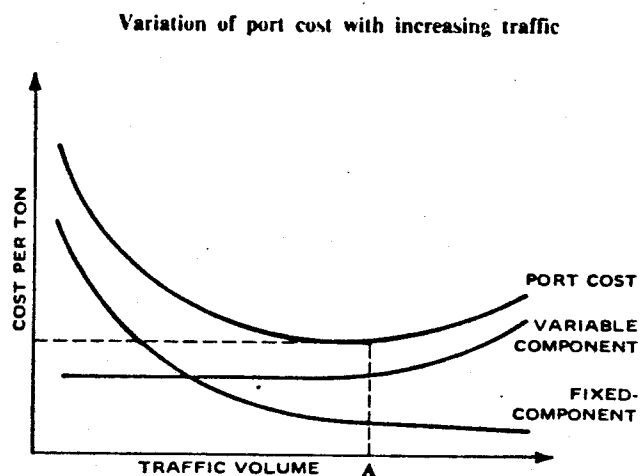
(This shorter waiting time might be due to excess port berths which are built to accommodate the seasonality of the ports activities.)

However, the total turn-around time which is used to measure the port's efficiency might not be as impressive as some other ports.

I observed at Terminal Six that the average rate of container movement is about 15 containers per hour. This observation was later confirmed by the Port Captain of Terminal Six who admitted that the productivity of container handling is relatively low. Actually the POP does not fare badly in container productivity with respect to

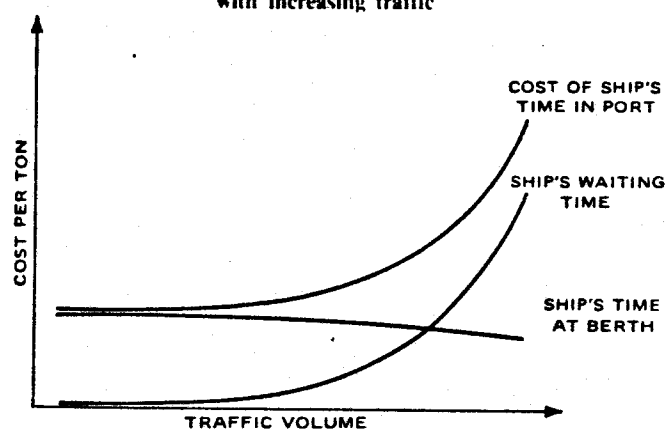
Fig. 5

5(a)



5(b)

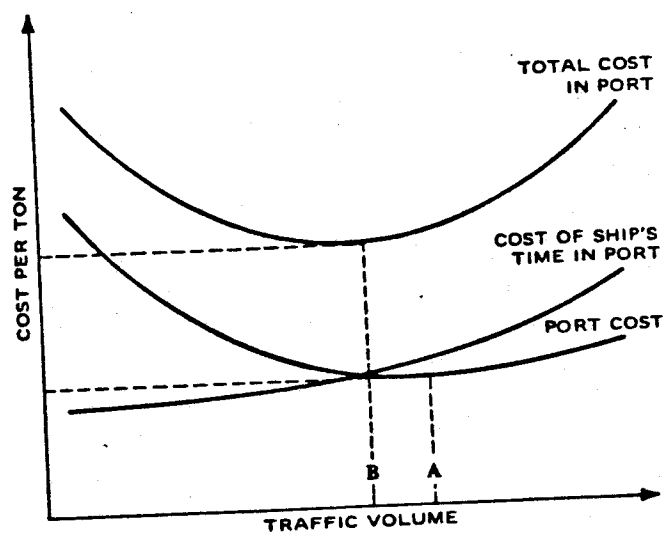
Variation of the cost of ship's time in port with increasing traffic



Sources: Unctad 17

Fig. 7

Variation of total cost in port with increasing traffic



Source: Unctad 17

other major container terminals. A 1978 UNCTAD report¹⁹ shows that of 21 major container terminals, effective productivity fell within the range of 300-500 TEU's per day. In POP the average is 360 TEU's per day. One of the Masters of a Japanese shipping line told me that in Kobe, Japan, the average rate is 25 containers per hour,²⁰ (i.e., 600 TEU's/day). The Master, who was apparently disappointed by the relatively slow turn-around in POP, attributed the higher efficiency of the port of Kobe to its amiable labour relationship. Labour turnover in a port can increase port charges by increasing port costs while at the same time decreasing the quality of port services. It seems that the labour problems are a major cause of low productivity, especially in comparison to Kobe.

Labour relations in POP:

One of the major tasks of the terminal authorities in day-to-day activities is dealing with the problems of the International Longshoremen's Union--the union from which the stevedores are recruited. The port's relations with this union are so delicate that, in many cases, a trivial action can virtually halt the terminal operations for at least several hours if not days. I witnessed an example of this when a Japanese liner was visiting Terminal Six. The crew of the ship (unaware of the union contract that assigns all water front activities to the longshorement) in an attempt to expedite the longshorement's work, opened a hatch on the ship. This simple action resulted in a gang strike which paralysed the port activities for a whole week.

Many of the labour problems stem from the historical mistreat-

ment of the dock workers by employers. In the past, the labour force was recruited on a casual basis from an open market pool. The employers did not provide good working conditions for their workers as there was an excess of labour and the employer could find others who were willing to work longer hours or were willing to work for lower pay. Because of these poor conditions the Longshorement's Union developed as a self-protection system.

Undoubtedly, such labour "abuses" occurred in the past. The existing longshoremen's problems are a result of attempts to minimize both the risks from the work as well as the labour dependency through mechanization of the waterfront industry. In recent times, the increasingly specialized quayage and the mechanical handling of cargo transformed the highly-labour intensive of the POP into a highly capital-intensive port. Mechanization has resulted in a decreasing demand for labour; therefore causing strong labour resistance from the organized longshoremen who are generally prone to strikes.

The casual labour recruitment and the decreasing demand for labour that resulted from the technological advances created what Bird²¹ called 'casual attitudes' which create idiosyncratic practices. These attitudes and practices which are 'restrictive' to the port authorities but 'customary to the labourers' are developed as self-protection from the employers and the threat to jobs due to mechanization processes in the industry. Although the Mechanization and Modernization (M & M) Agreement of 1960 between International Longshoremen and the Warehousemen Union and Pacific Maritime Association of Employers was a step forward in overcoming practices that have impeded mechanization,

the fundamental labour problems have yet to be solved.²² The M & M Agreement provided a guaranteed minimum wage and pension funds by raising a \$25 million supplemental fund. However, the agreement fell short of providing secure jobs.

The Port of Portland, which is not a member of the Pacific Maritime Association (though it observes the M & M Agreement) has relatively low labour turnover, but is not immune to the labour conflicts. The terminal authorities are constantly at odds with the Union, and waste-time practices are commonplace. The labour unrest stems from workers loyalty to the union. The irregularity of workload in which the labourers are recruited from the Union and the lack of occupational stratification, result in a closely-knit union where loyalty is more inner-directed than to the port authorities.

Another labour problem for the POP is lack of interaction between the port authorities and longshoremen. The stevedoring companies hire the stevedores from the Longshoremen Union. Since stevedores are detached from the port authorities, the only direct contact they have arises only during a labour crisis. At this time it might be too difficult for even a skillful operations manager to avert a crisis.

Therefore, it seems that complete decasualization of labour recruitment is essential for harmonious port operations. Decasualization, in which the labour is permanently recruited to the port, might end inefficiencies and delays in cargo handling and help cure the chaos of the casual system by making the port responsible for all its operations within its area including stevedoring. If such a

process is not possible due to institutional structures of the port or the union, a piece-work contract basis might be more efficient. In a piece-work contract, the stevedores might be paid in terms of tons handled in an hour rather than hourly wages regardless of their productivity. However, the port authorities might also encounter resistance to such a change. The workers could enjoy some sort of security and stability afforded to them by the established pattern of the union. They might then resist any change whether in restructuring their labour relation or installment of new equipment. Resentment is usually based on an economic factor (i.e., losing a job), inconvenience to the worker by reassignment to new roles, or uncertainty.

One method of minimizing labour problems even if labourers are permanently employed or on a piece-work contract, or as in the existing labour conditions in the POP, is participation of decision-making through representation. Labour representation particularly in the field of terminal operations will create confidence and respect among the workers. Group discussions and suggestions from employees through their representatives will still decrease turnover and will probably contribute to higher productivity in terminal activities.

Naturally, there is a limit to the degree of participation and all employees can not participate in all decisions. The participative approach should be used by terminal managers to gain input and ideas for key decisions concerning the day-to-day duties of their workers. In this way the port workers and management will mutually cooperate rather than act as adversaries as frequently happens.

C. The Implication of the Internship of POP to the Somali Port Authorities (SPA):

1. Organizational Structure of SPA

The Somali Port Authorities which was established in 1962 and restructured in 1970 and 1973 is an autonomous public agency (as stated in its charter) which is responsible for operating and maintaining the country's commercial ports. The SPA is administered by a Board of Directors appointed by the President of the Republic. The execution of policies laid down by the board are delegated to a president and general manager who are nominated from the Board of Directors and who share some of the management functions.

The management organization of the SPA is in two lines:

a) the Central Management which consists of the General Manager and the Heads of the three main departments of planning, finance, and personnel, and

b) the administration of the individual ports run by a port manager.

The directors of the central departments and the individual port managers have equal status in the personnel establishment and both report directly to the General Manager. This is illustrated (see attached organizational chart).

2. Problems in Somali Ports

The SPA, though created in 1962, has yet to prove its effectiveness for numerous reasons. The main problem in management includes:

a) a shortage of qualified staff in the field fo manage-

ment in top echelons, e.g., executives, port planners, etc.,

b) a shortage of cost controllers, equipment specialists, and trained cargo supervisors. The shortages in management are coupled with other port problems such as:

- a) a shortage of technicians and equipment operators,
- b) a lack of adequate equipment and facilities,
- c) poor maintenance of port equipment, and
- d) labour apathy.

The result is an inefficient port faced by constant port congestion with crowded warehouses and slow turn-around for the vessels. Inefficiency raises the cost of transportation and contributes to the draining of the country's already strained economy. I hope my internship experience combined with my graduate training will be a valuable asset to the Somali Port Authorities in providing some needed expertise to begin to solve these problems.

The Somali ports are not comparable to the level of sophistication, efficiency and management of the Port of Portland and it will take years, even decades, before we transform our port to an acceptable level of efficiency. The level of efficiency which I observed in the Port of Portland requires high capital investment and wise management; these ingredients are in short supply in Somalia. Therefore, we must improve our policies in utilizing, to the utmost, the existing limited resources, human and material.

With the rapidly changing port technology, there is probably little hope for a country like Somalia with a GNP of about \$400 million, to cope efficiently with the problem. In fact, some developing countries

like Nigeria, Saudi Arabia and the United Arab Emirates, who have responded erratically to their port problems by installing all the equipment that money can buy, are not efficient. Although new installations have reduced congestion and queuing time for ships, over-investment has resulted in underutilization of the expanded facilities. There are usually vacant berths and idle cranes.

In Somalia where port facilities and labour skills are at a minimum, my priorities will be to convince the port authorities to adopt policies that will allow the intensive use of the existing facilities. These policies might include

- 1) labour reorganization to improve the performance of individual workers and even management, and

- 2) simplification of regulations to minimize institutional inefficiencies and cumbersome procedures. This can be done by:

- a) providing wages commensurate to the tedious work as well as premiums for performance above a pre-determined level,
- b) improved opportunities for promotion, and
- c) training courses and on-the-spot training, as well as training in a developed country.

I believe these measures will create incentives and will overcome the apathy common among the port workers and government employees in general.

By taking measures to improve both human relations and administrative methods, the effective productivity of our ports can be increased.

State Investment

President of Board of Directors

General Manager

Mgr of
Mogadishu
Port

Mgr. of
Berbera
Port

Mgr of
Kismayu
Port

Mgr of
Merka
Port

Director
of
Port
Planning

Director of
Finance

Director of
Personnel

Deputy
Mgr

Deputy
Mgr

Deputy
Mgr

Deputy
Mgr

Accounting
Section

Act.
Maintenance

Main.

Conclusion

Optimal port pricing, efficient cargo handling and good labour relations are among the many factors that are essential for the smooth operation of a port. The POP, which has multiple objectives in its pricing policy, rarely bases its prices on a commercial basis. Due to the highly competitive structure of the Northwest ports, and because of its principal mission of community development, the port usually bypasses the cost-based pricing system, adopted by the port authorities, to recover costs. This deviation from strict cost-plus pricing makes the port dependent on a community subsidy, which is rarely justified unless the marginal opportunity costs of resources used in providing port services at least equals the benefits obtained by the community.

The POP should devise a tariff system that reflects all costs that are involved in the provision of port services. It is widely agreed that marginal cost pricing is the most appropriate method of port pricing. Marginal cost pricing, particularly short run marginal cost pricing, is appropriate at all times. Marginal cost pricing reflects port demand and is a measure of resource allocation.

Port tariffs should be coupled with efficient cargo handling. Although the POP ranks high in cost efficiency and container handling among the Northwest ports, it lags behind some of the Far Eastern ports. Its low productivity might be attributed to lack of mutual cooperation by the port authorities and longshorement stevedores.

Labour relations and productivity could be improved if the

port authorities would minimize the threat of mechanization and the casual recruitment. Labour relations can be improved by decasualization of labour recruitment or by labour representation in the decision-making that affects their work.

My internship was a valuable experience in that it can provide some needed expertise to the Somali Port Authorities who are striving to improve their effectiveness. Although there are so many limitations in terms of port facilities and skilled manpower in Somalia, it is my understanding that a lot can be done with the existing resources provided there is wise management and dedication.

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