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CONTAINERISATION IN PAKISTAN
(FINAL REPORT)

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I. INTRODUCTION:

Already for some years the need is felt in Pakistan for a coordinated approach for the introduction of modern door-to-door transport systems and at the meeting of the Ports & Shipping Committee of the Transport Advisory Council held on 3rd November, 1977 it was decided to form a working group to study the development of containerisation and to make recommendations for its implementation in Pakistan.

Chairman of this Working Group on Containerisation is Director General of Ports and Shipping and the members are representatives of the Ministry of Transport and Communications, Planning Division, Pakistan National Shipping Corporation, Karachi Port Trust, Pakistan Railways, Customs, Pakistan Chambers of Commerce and Industry, Pakistan Shippers Council, Pakistan Ship's Agents Association and representatives of foreign shipping lines calling at Karachi with container vessels.

A working paper was prepared in November, 1977 and the five meetings of the working group were held on 6/12/77, 15.2.1978, 17.4.78 and 9.11.89, attended by an average of 16 members.

II. CONTAINERISATION PROSPECTS:

The labour intensive manual handling of "break-bulk" general cargo will make it increasingly difficult and uneconomic to load and discharge "conventional" cargo, especially in the highly developed countries which are the main trading partners of Pakistan. The throughput of a container-berth is at least 3 times as high as a conventional berth.

Pakistan Shippers feel the pressure from their overseas buyers to containerise exports. The advantages of faster and safer transport in containers can not be ignored if Pakistan's market-share is to be maintained or improved. The great majority of commodities to and from Pakistan in liner vessels is suitable to be carried in containers.

All new liner ships on order are geared to carry a fair proportion of their cargoes in containers. The 16-21 new liner-vessels of Pakistan National Shipping Corporation will have a container-carrying capacity of 300-400 t.e.u (twenty foot equivalent units) each.

Present container through-put of Karachi is about 10,000 t.e.u. per year. In view of the above Pakistan's transport infrastructure should be geared to an accelerated growth of this traffic in the coming years.

III. QUANTIFICATION:

Total cargo handled in Karachi, notwithstanding a stagnation during the last 10 years, showed an average increase of 3.7% per year during the period 1947/1977.

General cargo throughput of Karachi in 1977/1978 was about 2.5 million tons. This figure is arrived at by deducting from total dry-cargo throughput all wheat, rice, cement, fertilisers, rock-phosphate, coal, coke, iron and steel. The actual figures for the last 6 years are as follows (in 1000 metric tons):-

	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>
Total dry Cargo	5,892	5,610	5,377	5,461	4,805	5,555
Wheat, Rice, Cements fertilizers, rock- phosphate, coal, coke, iron and steel.	3,536	3,287	3,265	3,025	2,113	3,000
General Cargo:	2,356	2,323	2,112	2,436	2,692	2,552

(Source K.P.T. Figures).

If we assume an average growthrate of 3.0% for the period 1978-2000 this will give a general cargo throughput of about 4.8 million tons by the turn of the century. It is unlikely that by that time more than half a these cargoes, mainly carried in liner vessels, will still be handled in the conventional break-bulk way.

Presently about 40% of Pakistan's general cargo is carried in containers and it is difficult to predict exactly how fast the swing to containerisation will be during the next few years.

Report from Soferoil (early 1977), the workingpaper (Nov, 77) and P.W.S.C. (1978) estimate that by 1984 about 16% of the general cargo will be carried in containers, whilst K.P.T. (June, 1978) expects that this will only be 10%.

If we split the difference we get the following projection of average weekly container throughput of Karachi (in t.e.u).

1979	250	
1980	330	
1981	420	(bases on 12 metric tons cargo per loaded container and 1/6th of all containers moving empty).
1982	540	
1983	650	
1984	780	

In the higher projection these throughputs would be reached one year earlier, in the lower projection one year later.

IV. P O R T S.

In a more distant future for the very large container vessels carrying several thousand t.e.u., special new berths might have to be constructed alongside deep water.

However, in the coming 15-20 year container numbers per ship to be handled in Pakistan will be limited to a few hundred, very often from multi-purpose vessels which will also handle conventional cargoes at Karachi.

Pakistan National Shipping Corporation is replacing its conventional ships by multi-purpose vessels with a container capacity of 300-400 t.e.u. each and by 1984 sixteen of these liner vessels are expected to handle about 15/20,000 t.e.u. per year in Karachi.

A typical call of such vessel would be as follows:

On arrival discharge 150-200 t.e.u. at the container berth in one day;
then shift to the liner berth to discharge and load all conventional cargo in 3-4 weeks;
finally shift to the container berth to "top-of" with 150-200 t.e.u. on sailing date.

In this way Pakistani liner vessels (carrying about 40% of container cargoes) will utilize the container berth about 400 days per year.

Similarly foreign vessels would need container facilities and it is expected that from 1980 the combined requirements would warrant in Karachi a container berth equipped with container-crane.

A second container-berth would be required about six years later to cope with the total container throughput of Karachi.

As the provision of these facilities can not be postponed until the realisation of future port-expansion-projects, berths in the present port-area should be selected for conversion to container handling and one of these berths should be operational in 1980.

If the under-construction Juna under berths would be chosen for this purpose the disturbance caused to present port operations would be minimal.

It is suggested that the most national solution would be for KPT to equip and operate this multi-user container terminal.

V. CONTAINER HANDLING SYSTEM:

In view of the limited space available in the port of Karachi it is of the utmost importance that all storage, stuffing, stripping, cleaning and repairs of containers take place outside the port area. at shippers/receivers premises and at container freight stations.

Part of the containers can be transferred direct between container ship and rail-or land-transport but to allow a smooth flow of containers to/from the ship a certain amount of transit storage in the port area can not be avoided.

This transit-storage should be near the container quay and as space-efficient as possible. The two options are:

- a) Chassis System.
- b) Stacking System.

CHASSIS SYSTEM:

This system is presently in operation in Karachi. Containers are discharged from the ship on a terminal - chassis and remain on that chassis during stripping

cleaning, storage and stuffing (all in the port area) until they are re-loaded again on a container-ship. If they are to move outside the port area they have to be transferred from terminal-chassis to road-or railtransport by side-loaders, straddle carriers or portal cranes.

With increasing container-numbers the chassis-system becomes less suitable as it is very space consuming. (area required is about 65 square meter per t.e.u.).

Based on a transit-storage capacity of 2% of the yearly throughput the storage area required for the 1000-1500 terminal chassis per berth would be 16-24 acres.

As such an area is not available in the immediate vicinity of the berth a considerable number of tractors would be required for the haulage of the containers through the port between berth and storage area.

STACKING SYSTEM:

A more commendable method for larger number of containers is to stack the containers in the transit storage area. On the basis of 2-high stacking with a yard-portal-crane (transtainer) the space requirement is only 15 square meter per t.e.u. and a storage area of 4-6 acres per berth would be sufficient. This area can be found immediately behind the berth and 5 yard trucks would be able to carry the flow of containers between ship's

side and yard-portal-crane. This crane can also effect the "second handling" (transfer between stack and rail-or road transport).

VI. CONTAINER FREIGHT STATION:

For the following activities which in future will not take place in the port area, the establishment of a container freight station in the Karachi/Port Qasim area is required:

- Storage of empty and full containers.
- Stuffing and stripping of containers; Consolidation and distribution; storage of cargo; customs clearance.
- Maintenance, repairs and cleaning of containers.

This container freight station should be located on the main railway line somewhere between Karachi and Pipri.

It is desirable that transport of containers between C.F.O and the container berth takes place by rail. Transport between c.f.s. and receivers/shippers in the Karachi area will be by road. The C.F.S. should be equipped with a portal crane for the stacking of containers and for the transfer to rail and road transport.

The c.f.s. should be a custom - bonded area.

It could be argued that the Karachi container Freight Station, as an extension of the container-quay should be the responsibility of K.P.T. and therefore under its jurisdiction.

However in view of the multitude of activities at this C.F.S. another type of management might be preferred.

The inland C.F.S. should be under the authority of Pakistan Railways.

See also: diagram Annexure-I.

VII. INLAND TRANSPORT:

Most of the long-distance transport of containers in Pakistan will go by rail and the Sofrerail Report estimates that by 1984 each week 500-600 containers with import and export cargoes Via Karachi will travel this way.

Pakistan Railways should modify sufficient rolling stock to carry this traffic and should provide lifting gear at the inland transfer points to handle containers on and from the railcars.

This could be done at the inland Container Freight Stations which would be under the control of P.R. A start could be made with the container freight station in the Lahore area.

Containerisation will give a considerable improvement in the turnround of rolling stock as compared to conventional break-bulk transport and major technical problems (track specification, side-and over head clearance, etc.) are not foreseen.

P.R. intend to apply the normal tariff for the various commodities for the rating of container-traffic. The shippers would prefer a set of flat rates for containers based on weight, irrespective of the commodities loaded in the container. It is suggested that guidance is sought from the International Railways Union and that the usual international practice in this respect might be followed for a trial period.

The short-distance transport of containers will mainly go by road and it is suggested that this haulage on special road-licenced container-chassis should be arranged by private enterprise. No special recommendations in this respect are proposed at this stage.

VIII. C U S T O M S.

The Central Board of Revenue and the Customs Department are fully aware of the benefits of containerisation as a fast, economical and safe transport system. Normal custom laws and rules are relaxed for the (temporary) importation of containers and container-handling equipment. Full cooperation has been vowed for the further promotion of door-to-door transport, which will also help combat port congestion:

"All formalities pertaining to the examination, weighing, assessment, clearance, unpacking, packing, etc. of containerised cargo must be carried out outside the port premises so that berthing and cargo-stacking space is made available to other vessels."

(Letter from Central Board of Revenue, 7/6/1978).

IX. L A B O U R.

The labour aspects of containerisation have not been covered by the working group. It is however recognised that the introduction of new cargo handling methods has given rise to many problems in the field of labour in countries which have preceded in Pakistan in this development.

There is a considerable reduction in the number of unskilled labourers required for the manual handling of general cargoes in the port and part of this work is re-allocated to places outside the port area.

The cooperation of labour organisations in the planning of re-training and in the adjustment of manning scales is required.

In order to learn from the experience of other countries where it often took quite some time to solve labour-management disputes in connection with containerisation, it is suggested that advice and assistance should be sought from I.L.O. Experts from this organization, with practical know-how of technical and social changes in the World's ports could contribute to the smooth introduction of containerisation in Pakistan.

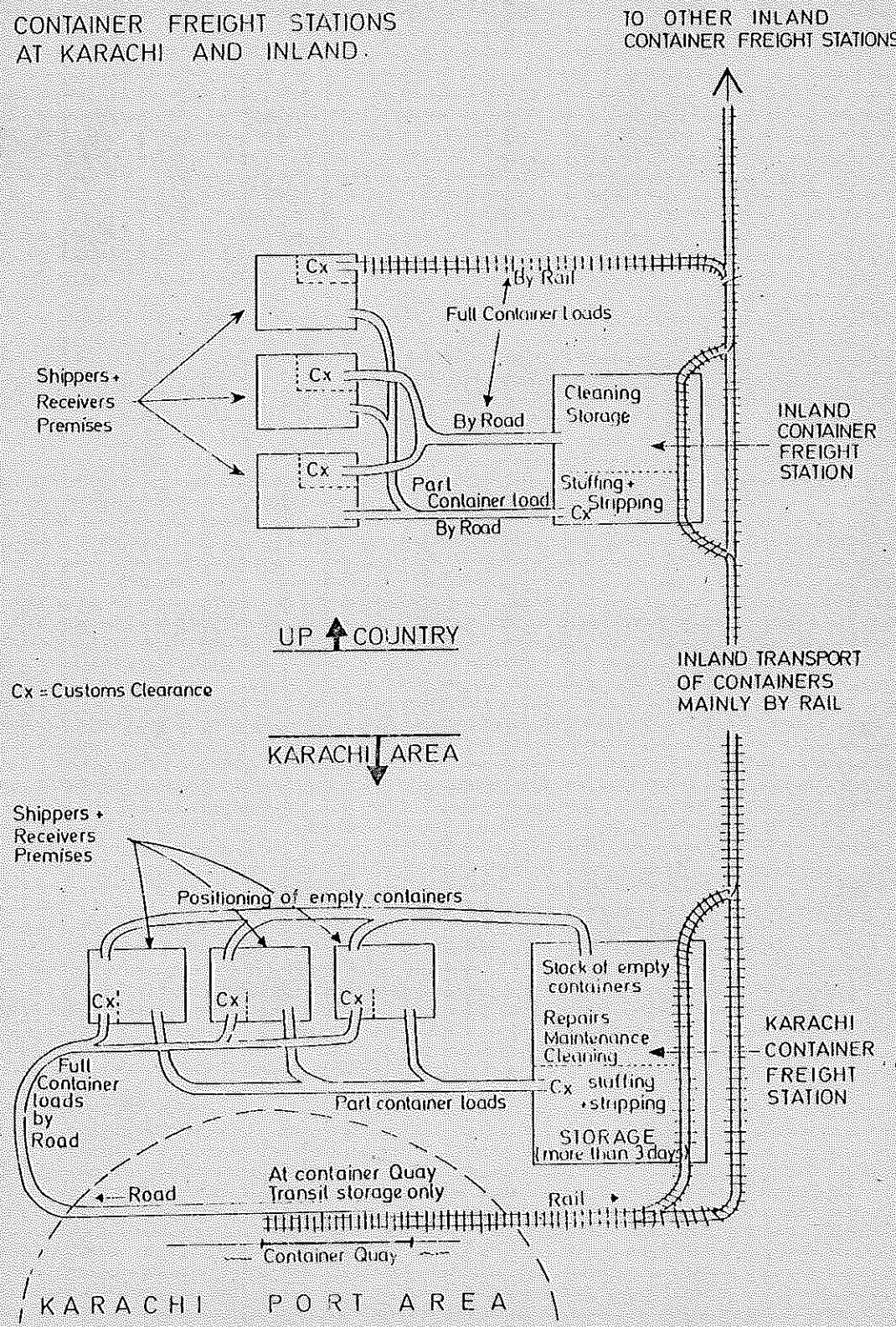
X. R E C O M M E N D A T I O N S:

1. In the present port-area of Karachi berths should be selected which are suitable for conversion to containerisation, to cope with the container-throughput of the next 10-20 years. The first berth should be operational in 1980.
2. These berths should be rail-connected and equipped with gantry-cranes and equipment for stacking and second handling of containers. In case of need outside assistance should be sought to solve technical problems which might arise.
3. The multi-user container-berth(s) should be equipped and operated by Karachi Port Trust.
4. All stuffing, stripping, storage, cleaning and repairs of containers will take place outside the port area. Only limited transit-storage of containers will be permitted in the port area.
5. A rail-connected, custom-bonded Container Freight Station to be established in Karachi area. The organisational form, to be decided later, might be a consortium between KPT, PR and other container-related interests. It should be operational in 1981.
6. Custom-bonded in-land Container Freight Stations to be operated by Pakistan Railways and to be equipped with lifting gear for the transfer of containers between rail and road transport.

7. P.R. to go ahead with implementation of Sofrefail Report recommendations in connection with containerisation. Sufficient rolling stock and handling equipment to be arranged for the long-distance transport of containers and for the carriage of containers between the container-quay and Karachi Container Freight Station. Introduction of a special container freight rating structure.
8. Request for technical assistance from ILO experts with experience of the introduction of containerisation in other countries.

Annexure . I .

CONTAINER FREIGHT STATIONS
AT KARACHI AND INLAND.



Cx - Customs Clearance