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FEASIBILITY STUDY FOR THE OPERATION OF A  
PASSENGER/RO-RO/FERRY SERVICE TO  
THE GULF BY P. N. S. C.

NTRC-29

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FEASIBILITY STUDY FOR THE OPERATION OF A PASSENGER/  
RO - RO/FERRY SERVICE TO THE GULF BY P. N. S. C.

N.T.R.C.'s 'Maritime Transport Survey' of January, 1977 proposed a ferry service between Karachi and the Gulf-ports for passengers and roll-on/roll-off cargoes. A report in this respect was submitted by NTRC to P.S.C. in September, 1977 and in the Fifth-Plan (1978-83) a provision was made for the acquisition of 3 passenger/ro-ro ferries.

On the basis of NTRC's report of September, 1977 and PNSC's report of February, 1979 in this respect we come to the following preliminary conclusions :

Present shipping services between Karachi and the Gulf are inadequate to carry a significant number of passengers or to promote Pakistan's exports to these areas.

What is required is a around-the-year, regular and frequent service for passengers, combined with ro-ro facilities for a fast handling of cargo - on -wheels.

A ferry can make a roundtrip Karachi - Muscat - Dubai - Dammam - Kuwait - Damman - Dubai - Muscat - Karachi in 9 days.

A Sample schedule is given in Annexure-A.

To include Bombay in the schedule would extend the roundtrip time to 12 days. On this basis 3 ferries can give weekly sailings between Bombay and the Gulf-ports and

twice - weekly sailings between Karachi and the Gulf.

This is based on ferries of the following description:

Length : 110,0 m.  
Width : 19,5 m.  
Draft : 4,5 m.  
Twin - screw, 2 x 4250 H.P., service speed 18 knots,  
bow - thruster;  
airconditioned accomodation for 1250 passengers  
(50 First Class, 1200 economy class);  
360 m. truck - Lanes ( 3 m. Wide)  
460 m. car - Lanes ( 2 m. Wide)

Price indication in March, 1978 from a Dutch shipyard for such a ferry was about \$ 16,8 million. This amount is without (foreign) Government subsidy which could be upto 25% of that amount. However in our calculations we have based on a new-building price of \$ 16, - million, for which long - term credit facilities should be available. For second hand ferries the price would have to be paid in cash, and we would have to rebuild an existing ferry to adopt it to spedial Gulf-trade requirements. For these reasons and calculations in this study are based on acquisition of new ferries.

Total number of passenger - movements between Karachi and the Gulf area is about 800,000 - 1,000,000 per year and the average fares (depending on distance) are as follows:

By air : Economy Class	\$ 200 - \$ 250
By sea : First Class	\$ 150 - \$ 250
Economy Class	\$ 100 - \$ 150

Proposed fare (including food) for the new ro-ro ferries would :

First Class     \$ 150 - 250; average \$ 200  
Economy Class   \$ 100 - 150; average \$ 125

Proposed average freight rates for motor-cars would be \$ 50 -per meter length and for trucks and cargo - on wheels \$ 75,-per-meter length.

Annexure - 'B' gives a calculation of the yearly:  
freight - revenue per ferry, about as follows:

With pay-load 100%	about \$ 15.0 million
90%	13.5 "
80%	12.0 "
70%	10.5 "
60%	9.0 "
50%	7.5 "
40%	6.0 "

Annexure-'C' gives a breakdown of total yearly  
Cost of ferry, of about \$ 5.5 million (based on a new building ferry of \$ 16.0 million, capital recovery factor 0.133879 for 20 years pay-back period and 12% interest).

This shows that the operation of these ferries would break-even at a payload of less than 40%, or, in the absence of any freight - carryings, at a payload of 50% on passengers alone.

An average payload of 60-70% (giving an internal rate of return of around 40%) is not unlikely. There would

also be cross-traffic between the Gulf - Ports with the convenient over-night sailings offered. The service would open up a completely new export market for Pakistan's fruit, vegetables, meat and fish to the Gulf area and it would also promote Karachi's position as a transshipment port.

SAMPLE SCHEDULE:

Ro-ro/passenger ferry  
 18 knots service speed  
 17 knots average speed

<u>PORT</u>	<u>Distance (N.Miles)</u>	<u>Sailing time (Hours)</u>	<u>Arrival (Time)</u>	<u>Day</u>	<u>Departure (Time)</u>	<u>Port Time (Hours)</u>
KARACHI	467	28	00.00	THURSDAY	12.00	12
MUSCAT	302	18	16.00	FRIDAY	18.00	2
DUBAI	294	18	12.00	SATURDAY	15.00	3
DAMMAN	250	15	09.00	SUNDAY	12.00	3
KUWAIT	250	15	03.00	MONDAY	21.00	18
DAMMAN	294	18	12.00	TUESDAY	15.00	3
DUBAI	302	18	09.00	WEDNESDAY	12.00	3
MUSCAT	467	28	06.00	THURSDAY	08.00	2
KARACHI			12.00	FRIDAY	24.00	12
	<u>2626</u>	<u>158</u>	Roundtrip time 9 days			<u>58</u>

Annexure - B

ro-ro passenger ferry  
Yearly Revenue

Passenger: First Class : 40x2x50      4.000 x \$ 200 = \$ 800,000  
 Economy Class: 40x2x1200 = 96.000x \$ 125 = \$12,000,000  
\$12,800,000

Less: Food      4,000 x 15 = \$ 60.000  
                  96,000 x 10 = \$ 960.000  
\$ 1.020.000

Commission + rebates 10%	<u>\$ 1,280,000</u>	\$ 2,300,000
Net income from cross trade 10%		\$ 10,500,000
		<u>\$ 1,050,000</u>
		<u>\$ 11,550,000</u>

Freight: Car-lanes (460m-10% = 414 m.net) 40x2x414x \$ 50		\$ 1,656,000
Truck-lanes (360m.-10% = 324 m.net) 40x2x324x \$ 75		<u>\$ 1,944,000</u>
		\$ 3,600,000
Less Commission + rebates 10%		<u>\$ 360,000</u>
		\$ 3,240,000
Net income cross - trade 10%		<u>\$ 324,000</u>
		<u>\$ 3,564,000</u>

Table yearly revenue:

at payload 100%	\$ 15,114,000
90%	13,602,600
80%	12,091,200
70%	10,579,800
60%	9,068,400
50%	7,557,000
40%	6,045,600

Annexure - C

ro-ro/passenger ferry.  
Yearly cost (US dollars)

	<u>N.B.</u> <u>\$12.-m.</u>	<u>N.B.</u> <u>\$20.-m.</u>	<u>N.B.</u> <u>\$16.-m.</u>
	<u>NTRC</u> <u>Report</u> <u>Sept.77</u>	<u>PSC</u> <u>Report</u> <u>Feb.79</u>	<u>Revised</u> <u>Calcula-</u> <u>tion.</u>
Salaries, allowances + victualling	600,000	400,000	600,000
Store, Spares, Lubr. Oil	240,000	200,000	240,000
Repairs + Maintenance	350,000	150,000	250,000
Insurance	350,000	400,000	400,000
Bankers	700,000	825,000	850,000
Ports + Pilotage	300,000	462,000	400,000
Terminals + handling	400,000	150,000	300,000
Sandries and indirect costs	434,000	225,000	360,000
	<u>3,374,000</u>	<u>2,812,000</u>	<u>3,400,000</u>
Capital Recovery factor. 1333879 (12%, 20 years)	<u>1,606,548</u>	<u>2,677,580,</u>	<u>2,142,064</u>
T O T A L:	4,980,548	5,489,580	5,542,064