PART 2

APPENDIX

TABLE A1.2.1 Gross Regional Product by Province 1981 - 1990 (Constant 1993 Rs. Million)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Western	114543.9	120878.7	126992.6	139523.8	156908.5	159959.6	168034.8	175465.5	182117.3	193551.27
share of GDP	38.2	38.3	38.4	40.2	43.0	42.1	43.5	44.2	45.0	45.0
index	100.0	105.5	110.9	121.8	137.0	139.6	146.7	153.2	159.0	169.0
Southern	25702.7	27612.3	29429.1	29102.2	31925.6	33049.0	33061.0	36382.1	32675.5	35916.588
share of GDP	8.6	8.8	8.9	8.4	8.8	8.7	8.6	9.2	8.1	8.4
index	100.0	107.4	114.5	113.2	124.2	128.6	128.6	141.5	127.1	139.7
Central	30776.6	31859.8	36141.2	40868.1	37547.7	39647.1	40128.5	39411.2	41909.0	43063.379
share of GDP	10.3	10.1	10.9	11.8	10.3	10.4	10.4	9.9	10.4	10.0
index	100.0	103.5	117.4	132.8	122.0	128.8	130.4	128.1	136.2	139.9
Sabaragamuwa	19836.4	20920.9	21373.8	25117.6	24165.9	28774.0	27700.2	26718.2	27853.3	29810.644
share of GDP	6.6	6.6	6.5	7.2	6.6	7.6	7.2	6.7	6.9	6.9
index	100.0	105.5	107.8	126.6	121.8	145.1	139.6	134.7	140.4	150.3
Uva	16010.6	16710.5	18091.6	18551.4	17164.6	17392.0	18624.3	18620.7	15448.9	18839.432
share of GDP	5.3	5.3	5.5	5.3	4.7	4.6	4.8	4.7	3.8	4.4
index	100.0	104.4	113.0	115.9	107.2	108.6	116.3	116.3	96.5	117.7
North Western	30784.5	32844.6	31866.0	33539.2	38736.6	40508.5	38808.6	38769.1	37646.4	40897.525
share of GDP	10.3	10.4	9.6	9.7	10.6	10.7	10.0	9.8	9.3	9.5
index	100.0	106.7	103.5	108.9	125.8	131.6	126.1	125.9	122.3	132.9
North Central	14288.7	14622.1	15992.9	17164.9	17969.3	19093.9	18442.9	19059.8	16241.7	16848.968
share of GDP	4.8	4.6	4.8	4.9	4.9	5.0	4.8	4.8	4.0	3.9
index	100.0	102.3	111.9	120.1	125.8	133.6	129.1	133.4	113.7	117.9
Eastern	20958.9	23392.0	19909.7	17458.7	20789.2	18446.0	21019.8	19508.3	25501.7	27886.825
share of GDP	7.0	7.4	6.0	5.0	5.7	4.9	5.4	4.9	6.3	6.5
index	100.0	111.6	95.0	83.3	99.2	88.0	100.3	93.1	121.7	133.1
Northern	21748.5	21635.7	25227.9	20504.3	15853.4	16984.2	16218.5	16862.8	19193.8	16410.764
share of GDP	7.3	6.9	7.6	5.9	4.3	4.5	4.2	4.2	4.7	3.8
index	100.0	99.5	116.0	94.3	72.9	78.1	74.6	77.5	88.3	75.5
Subtotal	294650.9	310476.6	325024.8	341830.2	361060.7	373854.2	382038.6	390797.6	398587.7	423225.4
Residual	5137.4	4857.7	5296.3	5035.3	3494.6	6131.2	4116.9	6086.8	6132.9	6429.8701
share of GDP	1.7	1.5	1.6	1.5	1.0	1.6	1.1	1.5	1.5	1.5
Sri Lanka	299788.3	315334.3	330321.1	346865.4	364555.3	379985.4	386155.5	396884.4	404720.6	429655.27
index	100.0	105.2	110.2	115.7	121.6	126.8	128.8	132.4	135.0	143.3

Source: Department of National Planning, Ministry of Policy Planning and Implementation (unpublished)

TABLE A1.2.2 Gross Regional Product by Sector 1981-1990 (constant 1993 Rs million)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Western										
1. Agriculture	7654.3	8063.8	6837.9	6640.1	7520.3	7534.7	6513.5	6416.7	6181.6	7098.6
2. Mining	670.6	642.0	772.1	1727.9	1494.9	955.0	1271.5	4205.0	9649.3	10517.8
3. Manufacturing	33277.7	31563.9	32877.6	38372.6	51656.6	53652.7	57883.4	58106.8	59372.0	65015.6
4. Electricity & Gas	963.3	1035.0	1072.3	1177.1	1300.8	1398.8	1496.0	1538.8	1571.9	1736.4
5. Trade & Tourism	33968.5	39599.2	42823.4	46315.4	49654.4	51240.1	53128.8	54700.5	56010.2	58472.6
6. Transport & Communication	15536.7	16198.0	17345.9	19423.3	20137.1	20262.2	20768.1	21434.7	21028.6	11801.3
7. Construction	6736.6	7035.2	8037.6	7589.0	6870.8	6291.2	7645.0	9268.3	7682.4	7666.9
8. Banking, Insurance, & Real Estate	4769.6	5497.6	5656.1	6192.6	6492.7	6518.4	6810.5	7392.1	7525.6	5640.3
9. Government Services	6055.0	6143.3	6157.1	6283.9	6528.6	6758.3	7044.9	7054.9	7675.5	8067.7
10. Private Services	4911.7	5100.8	5412.6	5802.0	5252.3	5348.1	5473.3	5347.8	5420.0	5640.3
Total Provincial Product	114543.9	120878.7	126992.6	139523.8	156908.5	159959.6	168034.8	175465.5	182117.3	181657.4
Central										
1. Agriculture	9641.3	9314.6	9670.1	12039.3	11687.7	11687.7	10668.9	10721.7	11680.3	11050.1
2. Mining	219.1	209.8	252.3	28.6	64.5	253.1	714.2	201.3	194.6	212.1
3. Manufacturing	5897.3	6149.7	8856.3	10321.8	5593.4	7062.1	7004.1	6813.1	6996.9	7697.3
4. Electricity & Gas	103.9	116.8	115.7	133.0	151.8	175.3	182.1	185.2	171.4	190.0
5. Trade & Tourism	6538.6	7630.9	8248.7	8925.2	9306.4	9605.0	9947.9	10249.6	10491.3	10961.5
6. Transport & Communication	2381.0	2393.7	2780.1	3096.6	3149.1	3219.0	3300.0	3204.2	3164.5	3359.4
7. Construction	1914.6	1863.0	1937.6	1975.3	2528.3	3004.0	3017.0	2702.3	3523.3	3666.7
8. Banking, Insurance, & Real Estate	833.4	942.0	952.5	1002.3	1063.5	1033.7	1080.4	1106.9	1189.0	1575.0
9. Government Services	2368.5	2326.7	2359.5	2307.7	2536.3	2575.1	2685.5	2733.7	2984.3	3111.6
10. Private Services	878.9	912.7	968.5	1038.2	1466.6	1493.4	1528.3	1493.3	1513.5	1575.0
Total Provincial Product	30776.6	31859.8	36141.2	40868.1	37547.7	40108.3	40128.5	39411.2	41909.0	43398.7
Southern										
1. Agriculture	9614.8	10162.1	9397.6	8498.5	10872.0	11103.6	9750.3	10783.1	8713.1	10671.0
2. Mining	434.0	415.5	499.7	96.7	164.8	32.4	940.6	3635.9	1056.2	1151.3
3. Manufacturing	3315.9	3885.2	5430.3	5223.8	3751.9	3850.1	3907.2	3732.3	3864.8	4215.5
4. Electricity & Gas	168.2	182.3	187.3	207.4	237.0	250.5	260.4	261.9	258.4	293.8
5. Trade & Tourism	4578.7	5420.3	5766.3	6326.8	7648.8	7969.7	8285.8	8389.2	8550.8	8935.6
6. Transport & Communication	2430.0	2446.3	2827.7	3151.4	3240.5	3315.2	3356.9	3270.9	3396.2	3361.1
7. Construction	1575.5	1371.3	1435.3	1597.3	1535.4	1922.7	1811.8	1570.4	1726.5	1932.2
8. Banking, Insurance, & Real Estate	711.1	802.0	879.3	900.2	974.2	1025.7	1067.5	1056.2	1193.8	1446.8
9. Government Services	1987.8	2006.2	2028.4	2052.5	2153.6	2207.3	2276.6	2310.4	2525.4	2673.7
10. Private Services	886.8	920.9	977.2	1047.5	1347.3	1371.9	1404.0	1371.8	1390.3	1446.8
Total Provincial Product	25702.7	27612.3	29429.1	29102.2	31925.6	33049.0	33061.0	36382.1	32675.5	36127.8

TABLE A1.2.2 Gross Regional Product by Sector 1981-1990 (constant 1993 Rs million)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Northern										
1. Agriculture	7430.7	7092.8	9636.8	5351.2	5480.8	5480.8	5786.9	5831.2	7241.7	4037.8
2. Mining	10.7	585.4	704.0	71.2	85.5	9.5	0.0	0.0	0.0	0.0
3. Manufacturing	961.9	1043.2	353.7	1511.7	682.1	779.9	587.0	706.3	892.8	857.5
4. Electricity & Gas	65.2	74.7	72.5	85.3	91.6	93.2	87.1	99.0	127.2	153.2
5. Trade & Tourism	4659.9	5422.4	5879.5	6336.2	3816.3	3926.9	4066.9	4197.7	4293.2	4495.5
6. Transport & Communication	1803.0	1813.3	2040.4	2227.9	2240.3	2178.5	2226.5	2162.0	0.0	2355.7
7. Construction	2095.3	1320.6	1194.3	1224.0	835.8	981.2	843.6	1155.4	1408.7	1489.8
8. Banking, Insurance, & Real Estate	783.5	860.8	917.1	10321.8	818.1	718.4	737.7	0.0	1021.6	770.7
9. Government Services	1996.5	2029.9	2040.0	2086.1	1085.3	1085.9	1135.1	1050.8	1292.9	1202.4
10. Private Services	462.2	1392.8	1478.0	1584.3	717.6	560.9	747.8	560.9	740.6	591.5
Total Provincial Product	20268.9	21635.7	24316.3	30799.5	15853.4	15815.1	16218.5	15763.3	17018.7	15954.1
Eastern										
1. Agriculture	9407.3	10953.4	13262.3	9239.7	9705.9	9705.9	11845.0	10170.1	15856.9	18005.2
2. Mining	1003.9	10.3	12.3	1.1	1904.3	0.0	0.0	0.0	0.0	0.0
3. Manufacturing	6095.7	6541.9	362.0	1511.7	1318.0	819.7	934.2	917.1	957.3	1050.7
4. Electricity & Gas	52.6	62.0	58.5	70.8	76.1	77.4	80.3	82.3	84.6	75.6
5. Trade & Tourism	2155.2	2534.8	2704.0	2936.8	3886.8	3988.4	4130.0	4263.6	4360.4	4566.3
6. Transport & Communication	809.4	791.3	952.6	1041.8	1037.8	1026.7	937.6	959.8	2175.1	1020.6
7. Construction	693.0	667.9	700.1	754.1	866.8	963.1	990.1	997.7	1014.2	920.8
8. Banking, Insurance, & Real Estate	436.0	490.7	494.7	5223.8	479.5	481.9	502.0	814.9	530.1	770.7
9. Government Services	836.7	859.7	862.2	897.5	963.2	1011.5	1026.6	1269.8	1125.9	1106.4
10. Private Services	231.0	480.0	509.4	546.0	550.8	560.9	574.0	414.3	568.4	436.9
Total Provincial Product	21720.9	23392.0	19918.0	22223.1	20789.2	18635.5	21019.8	19889.6	26673.0	27953.4
North Western										
1. Agriculture	14846.3	15409.7	16188.7	16328.4	18589.3	18589.3	14710.9	17005.1	16540.0	18791.1
2. Mining	13.7	166.3	200.0	557.4	509.6	736.6	2926.3	1261.6	718.3	782.9
3. Manufacturing	3568.6	3587.2	1685.9	1816.6	1818.7	1996.4	1931.4	2116.2	2496.4	2578.0
4. Electricity & Gas	95.5	103.8	106.3	118.4	118.1	120.7	124.8	130.2	135.6	172.5
5. Trade & Tourism	5021.7	5830.9	6340.1	6821.4	7855.2	8076.0	8361.7	8639.7	8834.1	9256.7
6. Transport & Communication	2539.2	2552.1	2892.1	3329.2	3375.3	3399.6	0.0	3332.3	3079.9	3175.3
7. Construction	1335.7	1869.6	1029.0	1043.1	2538.5	3147.4	2692.8	1822.5	1362.0	1483.9
8. Banking, Insurance, & Real Estate	798.0	877.7	912.2	946.8	1024.1	1495.5	1542.1	1403.0	1189.0	1147.4
9. Government Services	1716.2	1731.1	1751.6	1763.2	1839.2	1866.8	1947.9	1121.4	2188.5	2280.6
10. Private Services	304.1	716.2	760.0	814.7	1068.5	1088.0	1113.5	1087.9	1102.6	525.3
Total Provincial Product	30239.0	32844.6	31866.0	33539.2	38736.6	40516.2	35351.4	37919.8	37646.4	40193.6

TABLE A1.2.2 Gross Regional Product by Sector 1981-1990 (constant 1993 Rs million)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
North Central										
1. Agriculture	6327.5	6308.3	7980.4	9338.4	10161.7	10161.7	9477.7	10084.8	6097.9	6157.1
2. Mining	173.7	961.2	1155.9	323.3	176.6	200.6	0.0	123.5	809.0	881.8
3. Manufacturing	950.3	999.9	362.0	289.5	505.6	998.0	1097.3	1079.3	1127.7	1261.2
4. Electricity & Gas	35.6	35.9	39.7	40.9	44.0	44.8	46.4	48.0	46.7	60.6
5. Trade & Tourism	1876.5	2234.9	2356.5	2586.6	2634.8	2733.3	2825.0	2890.2	2985.2	3103.0
6. Transport & Communication	821.7	832.3	974.4	1089.4	1122.7	1136.1	1158.4	1114.2	1017.2	1047.2
7. Construction	1763.1	1657.3	1492.8	1822.9	1173.1	1373.1	1521.8	1414.0	1626.3	1733.6
8. Banking, Insurance, & Real Estate	448.9	507.6	536.6	537.4	562.3	600.9	626.7	2012.7	699.1	591.5
9. Government Services	830.0	844.7	840.0	863.5	1181.5	1214.8	1265.7	1970.7	1412.7	1444.3
10. Private Services	689.6	239.9	254.6	272.9	406.9	414.3	424.0	414.3	419.9	1147.4
Total Provincial Product	13917.0	14622.1	15992.9	17164.9	17969.3	18877.6	18442.9	21151.6	16241.7	17427.8
Uva										
1. Agriculture	8189.8	8325.3	8088.7	6337.6	6861.0	6861.0	8133.6	8085.3	5061.5	7844.4
2. Mining	13.7	13.1	15.7	0.4	0.7	3.5	8.4	75.2	33.6	36.7
3. Manufacturing	1805.6	1939.5	3057.2	4724.8	2616.5	2061.2	2118.2	1989.5	2062.6	2285.8
4. Electricity & Gas	48.1	54.4	53.5	62.1	66.3	68.9	77.7	91.4	84.3	74.1
5. Trade & Tourism	2015.6	2343.5	2543.3	2741.7	2713.5	2791.5	2890.5	2984.5	3053.0	3197.9
6. Transport & Communication	1475.3	1515.0	1761.7	1972.1	2058.9	2162.2	2245.3	2206.7	1840.2	1940.7
7. Construction	793.2	771.1	763.6	871.1	743.2	765.2	918.2	925.9	811.0	931.6
8. Banking, Insurance, & Real Estate	493.1	550.2	578.4	581.6	580.8	590.5	613.8	642.8	706.3	525.3
9. Government Services	872.1	882.5	894.4	900.8	1034.6	1073.8	1108.8	1451.4	1291.6	1273.4
10. Private Services	304.1	315.8	335.1	359.2	489.2	498.1	509.8	498.1	504.8	989.9
Total Provincial Product	16010.6	16710.5	18091.6	18551.4	17164.6	16875.8	18624.3	18950.7	15448.9	19099.7
Sabaragamuwa										
1. Agriculture	7776.8	8018.9	7379.5	8282.2	8787.7	8787.7	8080.0	8079.4	7318.7	8511.1
2. Mining	885.1	847.4	1019.2	2769.8	1055.8	5195.1	3251.8	2280.3	2169.5	2364.8
3. Manufacturing	2701.5	2868.2	3106.2	3657.7	3008.7	3888.9	4333.3	4231.8	4421.8	4890.4
4. Electricity & Gas	103.7	119.3	115.5	136.2	120.9	133.8	91.5	96.5	101.4	67.4
5. Trade & Tourism	4031.1	4686.6	5087.1	5482.1	5867.6	6034.1	6247.8	6453.6	6600.1	6914.8
6. Transport & Communication	872.8	882.3	1010.8	1114.7	1140.8	1157.9	1190.1	1157.4	1703.6	1806.7
7. Construction	855.0	798.3	878.8	819.4	994.9	1014.3	1125.8	1030.2	1890.4	1397.6
8. Banking, Insurance, & Real Estate	757.0	825.4	847.1	888.1	908.2	969.4	1001.5	999.1	1072.3	989.9
9. Government Services	1320.6	1321.2	1342.7	1338.0	1359.4	1349.9	1417.7	1451.4	1624.3	1763.4
10. Private Services	532.7	553.2	587.0	629.3	921.8	938.6	960.6	938.6	951.2	1575.0
Total Provincial Product	19836.4	20920.9	21373.8	25117.6	24165.9	29469.8	27700.2	26718.2	27853.3	30281.1

Source: Department of National Planning, Ministry of Policy Planning and Implementation (unpublished)

TABLE A1.2.3 Growth of Sectoral Product and GRP by Province, 1981-1990 (%)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	GRP
Western	-7.3	1468.5	95.4	80.3	72.1	-24.0	13.8	18.3	33.2	14.8	58.6
Central	14.6	-3.2	30.5	82.8	67.6	41.1	91.5	89.0	31.4	79.2	41.0
Southern	11.0	165.3	27.1	74.6	95.2	38.3	22.6	103.5	34.5	63.2	40.6
Northern	-45.7	-100.0	-10.9	135.1	-3.5	30.7	-28.9	-1.6	-39.8	28.0	-21.3
Eastern	91.4	-100.0	-82.8	43.8	111.9	26.1	32.9	76.8	32.2	89.1	28.7
North Western	26.6	note*	-27.8	80.5	84.3	25.1	11.1	43.8	32.9	72.7	32.9
North Central	-2.7	407.8	32.7	70.0	65.4	27.4	-1.7	31.8	74.0	66.4	25.2
Uva	-4.2	168.5	26.6	54.2	58.7	31.5	17.4	6.5	46.0	225.5	19.3
Sabaragamu.	9.4	167.2	81.0	-35.0	71.5	107.0	63.5	30.8	33.5	195.7	52.7

TABLE A1.2.4 Gross Regional Product Per Capita 1981-1990 (constant 1993 Rs)

	1981	1990	change
Western	28,823	44,710	55%
Central	14,124	20,039	42%
Southern	13,001	16,551	27%
Northern	20,119	12,653	-37%
Eastern	22,856	23,474	3%
North Western	18,066	20,802	15%
North Central	20,097	16,849	-16%
Uva	17,142	18,238	6%
Sabaragamuwa	19,202	18,177	-5%
Sri Lanka	20,661	25,617	24%

* The reported values for Pollonaruwa district imply productivity more than 20 times higher than any other district and a growth rate of over 5000%, both of which are improbably high and thus not included in this analysis.

TABLE A1.2.5 Employment by Sector and District 1992 (thousands)

Provinces Districts	Total	Agriculture Hunting Forestry Fishing	Mining Quarrying	Manufac-turing	Electricity Gas Water	Construc-tion	Trade and Restaurants	Transport Storage Communi-cations	Insurance Real Estate Business Services	Community Personal Services	Other
Western	1455.8	224.9	15.2	335.7	8.8	86.1	242.2	96.7	45.8	356.8	43.6
Colombo	624.1	67.5	2.6	124.4	2.0	26.7	126.8	42.2	28.9	179.6	23.4
Gampaha	532.5	69.2	8.8	161.3	5.5	40.8	76.7	37.2	7.0	115.4	10.6
Kalutara	299.2	88.2	3.8	50.0	1.3	18.6	38.7	17.3	9.9	61.8	9.6
Central	803.2	469.9	3.1	60.8	2.7	28.4	74.6	24.1	4.6	100.6	34.4
Kandy	399.0	153.4	3.1	50.4	2.3	17.6	47.8	16.4	2.8	73.0	32.2
Matale	166.1	119.7	0.0	3.5	0.2	7.6	16.8	2.3	0.7	14.7	0.6
Nuwara Eliya	238.1	196.8	0.0	6.9	0.2	3.2	10.0	5.4	1.1	12.9	1.6
Southern	685.2	305.2	6.1	83.4	1.4	48.3	74.0	23.1	7.5	103.8	32.4
Galle	289.9	105.3	2.4	35.3	0.6	19.7	33.9	11.6	2.6	53.9	24.6
Matara	240.3	106.8	3.3	30.7	0.5	22.4	26.9	9.1	2.9	32.9	4.8
Hambantota	155.0	93.1	0.4	17.4	0.3	6.2	13.2	2.4	2.0	17.0	3.0
North Western	661.8	329.5	12.3	99.2	2.1	27.6	76.2	19.9	6.1	78.5	10.4
Kurunegala	470.3	231.9	5.8	71.6	1.1	20.1	54.4	14.6	4.7	61.0	5.1
Puttalam	191.5	97.6	6.5	27.6	1.0	7.5	21.8	5.3	1.4	17.5	5.3
North Central	368.6	263.5	2.6	14.4	1.0	10.0	18.9	8.9	1.4	47.1	0.8
Anuradhapura	268.2	195.6	1.5	7.8	1.0	8.0	11.4	6.2	1.0	35.5	0.2
Polonnaruwa	100.4	67.9	1.1	6.6	0.0	2.0	7.5	2.7	0.4	11.6	0.6
Uva	385.9	270.0	1.6	17.9	0.4	6.8	26.5	8.8	2.9	47.7	3.3
Badulla	274.1	195.1	0.5	8.9	0.2	5.6	18.2	6.9	2.4	34.0	2.3
Moneragala	111.8	74.9	1.1	9.0	0.2	1.2	8.3	1.9	0.5	13.7	1.0
Sabaragamuwa	563.9	215.7	36.2	54.9	1.3	23.0	50.8	20.5	4.1	92.6	64.8
Ratnapura	302.6	130.6	29.2	13.6	0.7	9.0	30.5	9.1	1.4	37.5	41.0
Kegalle	261.3	85.1	7.0	41.3	0.6	14.0	20.3	11.4	2.7	55.1	23.8
Sri Lanka	4924.4	2078.7	77.1	666.3	17.7	230.2	563.2	202.0	72.4	827.1	189.7

Source: Labour Force Survey 1992, Preliminary Report, Department of Census and Statistics

Note: based on subset of 7 provinces (Sri Lanka minus Northern and Eastern provinces)

TABLE A1.2.6 District Shares of Sectoral Employment 1992

Provinces Districts	Total	Agriculture Hunting Forestry Fishing	Mining Quarrying	Manufac-turing	Electricity Gas Water	Construc-tion	Trade and Restaurants	Transport Storage Communi-cations	Insurance Real Estate Business Services	Community Personal Services	Other
Western	0.2956	0.1082	0.1971	0.5038	0.4972	0.3740	0.4300	0.4787	0.6326	0.4314	0.2298
Colombo	0.1267	0.0325	0.0337	0.1867	0.1130	0.1160	0.2251	0.2089	0.3992	0.2171	0.1234
Gampaha	0.1081	0.0333	0.1141	0.2421	0.3107	0.1772	0.1362	0.1842	0.0967	0.1395	0.0559
Kalutara	0.0608	0.0424	0.0493	0.0750	0.0734	0.0808	0.0687	0.0856	0.1367	0.0747	0.0506
Central	0.1631	0.2261	0.0402	0.0913	0.1525	0.1234	0.1325	0.1193	0.0635	0.1216	0.1813
Kandy	0.0810	0.0738	0.0402	0.0756	0.1299	0.0765	0.0849	0.0812	0.0387	0.0883	0.1697
Matale	0.0337	0.0576	0.0000	0.0053	0.0113	0.0330	0.0298	0.0114	0.0097	0.0178	0.0032
Nuwara Eliya	0.0484	0.0947	0.0000	0.0104	0.0113	0.0139	0.0178	0.0267	0.0152	0.0156	0.0084
Southern	0.1391	0.1468	0.0791	0.1252	0.0791	0.2098	0.1314	0.1144	0.1036	0.1255	0.1708
Galle	0.0589	0.0507	0.0311	0.0530	0.0339	0.0856	0.0602	0.0574	0.0359	0.0652	0.1297
Matara	0.0488	0.0514	0.0428	0.0461	0.0282	0.0973	0.0478	0.0450	0.0401	0.0398	0.0253
Hambantota	0.0315	0.0448	0.0052	0.0261	0.0169	0.0269	0.0234	0.0119	0.0276	0.0206	0.0158
North Western	0.1344	0.1585	0.1595	0.1489	0.1186	0.1199	0.1353	0.0985	0.0843	0.0949	0.0548
Kurunegala	0.0955	0.1116	0.0752	0.1075	0.0621	0.0873	0.0966	0.0723	0.0649	0.0738	0.0269
Puttalam	0.0389	0.0470	0.0843	0.0414	0.0565	0.0326	0.0387	0.0262	0.0193	0.0212	0.0279
North Central	0.0749	0.1268	0.0337	0.0216	0.0565	0.0434	0.0336	0.0441	0.0193	0.0569	0.0042
Anuradhapura	0.0545	0.0941	0.0195	0.0117	0.0565	0.0348	0.0202	0.0307	0.0138	0.0429	0.0011
Polonnaruwa	0.0204	0.0327	0.0143	0.0099	0.0000	0.0087	0.0133	0.0134	0.0055	0.0140	0.0032
Uva	0.0784	0.1299	0.0208	0.0269	0.0226	0.0295	0.0471	0.0436	0.0401	0.0577	0.0174
Badulla	0.0557	0.0939	0.0065	0.0134	0.0113	0.0243	0.0323	0.0342	0.0331	0.0411	0.0121
Moneragala	0.0227	0.0360	0.0143	0.0135	0.0113	0.0052	0.0147	0.0094	0.0069	0.0166	0.0053
Sabaragamuwa	0.1145	0.1038	0.4695	0.0824	0.0734	0.0999	0.0902	0.1015	0.0566	0.1120	0.3416
Ratnapura	0.0614	0.0628	0.3787	0.0204	0.0395	0.0391	0.0542	0.0450	0.0193	0.0453	0.2161
Kegalle	0.0531	0.0409	0.0908	0.0620	0.0339	0.0608	0.0360	0.0564	0.0373	0.0666	0.1255
Sri Lanka	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Source: Labour Force Survey 1992-93, Preliminary Report, Department of Census and Statistics

Note: based on subset of 7 provinces (Sri Lanka minus Northern and Eastern provinces)

TABLE A1.2.7 Change in Employment by Sector and District, 1985-1992 (thousands)

Provinces Districts	Total	Agriculture Hunting Forestry Fishing	Mining Quarrying	Manufac-turing	Electricity Gas Water	Construc-tion	Trade and Restaurants	Transport Storage Communi-cations	Insurance Real Estate Business Services	Community Personal Services	Other
Western	150.7	10.1	2.2	39.5	-3.9	-5.4	28.6	-7.5	5.0	75.8	6.3
Colombo	40.4	31.8	-4.0	-8.7	-6.4	-13.1	7.0	-10.4	5.0	31.4	7.8
Gampaha	89.7	-18.6	4.8	41.3	3.6	8.8	23.2	0.7	-6.9	35.8	-3.0
Kalutara	20.6	-3.1	1.4	6.9	-1.1	-1.1	-1.6	2.2	6.9	8.6	1.5
Central	94.4	8.1	-2.6	22.8	-1.2	-2.0	12.5	3.1	-1.1	22.0	32.8
Kandy	56.3	-23.0	-0.4	24.1	0.1	-6.3	8.6	1.6	-1.7	21.5	31.8
Matale	29.4	28.7	-1.9	-3.8	-0.5	3.9	5.0	-1.5	0.1	-0.8	0.2
Nuwara Eliya	8.7	2.4	-0.3	2.5	-0.8	0.4	-1.1	3.0	0.5	1.3	0.8
Southern	50.5	-5.9	1.3	17.1	-0.1	24.2	9.3	3.0	2.4	31.7	-32.5
Galle	15.0	-26.5	1.3	0.6	-0.1	8.6	8.2	1.8	0.8	21.3	-1.0
Matara	24.0	6.5	1.6	7.5	-0.3	13.5	-1.1	1.5	1.2	6.1	-12.5
Hambantota	11.5	14.1	-1.6	9.0	0.3	2.1	2.2	-0.3	0.4	4.3	-19.0
North Western	41.5	-11.1	7.9	18.6	0.1	11.2	17.3	2.0	1.3	21.3	-27.1
Kurunegala	20.6	-23.4	2.7	25.1	0.1	9.1	10.5	2.9	0.9	22.5	-29.8
Puttalam	20.9	12.3	5.2	-6.5	0.0	2.1	6.8	-0.9	0.4	-1.2	2.7
North Central	11.3	-24.9	2.2	3.9	0.3	2.5	1.5	3.2	-0.1	25.3	-2.6
Anuradhapura	12.1	-11.3	1.4	0.2	1.0	3.1	-0.6	3.3	0.0	18.2	-3.2
Polonnaruwa	-0.8	-13.6	0.8	3.7	-0.7	-0.6	2.1	-0.1	-0.1	7.1	0.6
Uva	9.6	-23.8	-1.2	4.6	-0.3	0.9	9.5	-0.1	1.6	21.6	-3.2
Badulla	5.8	-10.3	-1.2	-1.0	-0.2	0.6	5.7	0.4	1.1	14.9	-4.2
Moneragala	3.8	-13.5	0.0	5.6	-0.1	0.3	3.8	-0.5	0.5	6.7	1.0
Sabaragamuwa	13.3	-78.4	6.3	-10.8	-0.1	7.4	10.5	5.0	1.6	43.3	28.5
Ratnapura	-4.8	-53.6	1.4	-5.9	-0.3	0.6	12.6	2.5	0.3	12.5	25.1
Kegalle	18.1	-24.8	4.9	-4.9	0.2	6.8	-2.1	2.5	1.3	30.8	3.4
Sri Lanka	371.3	-125.9	16.1	95.7	-5.2	38.8	89.2	8.7	10.7	241.0	2.2

Source: Labour Force Survey 1992-93 (Preliminary Report) and Labour Force Survey 1985-86, Department of Census and Statistics

Note: based on subset of 7 provinces (Sri Lanka minus Northern and Eastern provinces)

TABLE A1.2.8 Change in District Shares of Sectoral Employment 1985-1992

Provinces Districts	Total	Agriculture Hunting Forestry Fishing	Mining Quarrying	Manufac-turing	Electricity Gas Water	Construc-tion	Trade and Restaurants	Transport Storage Communi-cations	Insurance Real Estate Business Services	Community Personal Services	Other
Western	0.0090	0.0108	-0.0160	-0.0153	-0.0574	-0.1040	-0.0206	-0.0603	-0.0287	-0.0481	0.0309
Colombo	-0.0015	0.0163	-0.0745	-0.0466	-0.2538	-0.0920	-0.0276	-0.0632	0.0118	-0.0357	0.0402
Gampaha	0.0109	-0.0065	0.0486	0.0318	0.2278	0.0100	0.0233	-0.0047	-0.1286	0.0037	-0.0167
Kalutara	-0.0004	0.0010	0.0099	-0.0005	-0.0314	-0.0221	-0.0163	0.0075	0.0881	-0.0161	0.0074
Central	0.0074	0.0166	-0.0532	0.0247	-0.0178	-0.0355	0.0014	0.0107	-0.0288	-0.0125	0.1728
Kandy	0.0058	-0.0062	-0.0172	0.0295	0.0339	-0.0484	0.0022	0.0046	-0.0343	0.0004	0.1676
Matale	0.0037	0.0163	-0.0311	-0.0075	-0.0193	0.0137	0.0049	-0.0083	-0.0001	-0.0087	0.0010
Nuwara Eliya	-0.0020	0.0065	-0.0049	0.0026	-0.0324	-0.0007	-0.0057	0.0143	0.0055	-0.0042	0.0042
Southern	-0.0003	0.0057	0.0004	0.0090	0.0136	0.0839	-0.0051	0.0104	0.0209	0.0025	-0.1753
Galle	-0.0015	-0.0091	0.0131	-0.0078	0.0033	0.0276	0.0060	0.0067	0.0067	0.0095	-0.0069
Matara	0.0013	0.0059	0.0149	0.0054	-0.0067	0.0508	-0.0113	0.0057	0.0125	-0.0059	-0.0670
Hambantota	0.0000	0.0090	-0.0276	0.0114	0.0169	0.0055	0.0002	-0.0021	0.0017	-0.0011	-0.1015
North Western	-0.0018	0.0040	0.0874	0.0076	0.0313	0.0342	0.0110	0.0059	0.0065	-0.0027	-0.1452
Kurunegala	-0.0033	-0.0042	0.0244	0.0260	0.0185	0.0298	0.0040	0.0117	0.0033	0.0081	-0.1592
Puttalam	0.0014	0.0083	0.0630	-0.0183	0.0128	0.0044	0.0071	-0.0058	0.0031	-0.0107	0.0141
North Central	-0.0036	-0.0041	0.0272	0.0032	0.0259	0.0043	-0.0032	0.0146	-0.0050	0.0198	-0.0139
Anuradhapura	-0.0018	0.0002	0.0178	-0.0016	0.0565	0.0092	-0.0051	0.0157	-0.0024	0.0134	-0.0171
Polonnaruwa	-0.0018	-0.0043	0.0093	0.0048	-0.0306	-0.0049	0.0019	-0.0011	-0.0026	0.0063	0.0032
Uva	-0.0043	-0.0034	-0.0251	0.0036	-0.0080	-0.0013	0.0112	-0.0025	0.0190	0.0131	-0.0173
Badulla	-0.0033	0.0007	-0.0214	-0.0040	-0.0062	-0.0018	0.0059	0.0005	0.0121	0.0085	-0.0225
Moneragala	-0.0010	-0.0041	-0.0038	0.0075	-0.0018	0.0005	0.0052	-0.0030	0.0069	0.0046	0.0053
Sabaragamuwa	-0.0064	-0.0296	-0.0206	-0.0327	0.0123	0.0184	0.0052	0.0213	0.0161	0.0278	0.1480
Ratnapura	-0.0061	-0.0207	-0.0770	-0.0138	-0.0041	-0.0048	0.0164	0.0109	0.0015	0.0027	0.1313
Kegalle	-0.0004	-0.0089	0.0564	-0.0190	0.0164	0.0232	-0.0112	0.0104	0.0146	0.0252	0.0167
Sri Lanka	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Source: Labour Force Survey 1992-93 (Preliminary Report) and Labour Force Survey 1985-86, Department of Census and Statistics

Note: based on subset of 7 provinces (Sri Lanka minus Northern and Eastern provinces)

TABLE A1.2.9 Percentage Change in Employment by Sector and District 1985-1992

Provinces Districts	Total	Agriculture Hunting Forestry Fishing	Mining Quarrying	Manufac-turing	Electricity Gas Water	Construc-tion	Trade and Restaurants	Transport Storage Communi-cations	Insurance Real Estate Business Services	Community Personal Services	Other
Western	11.55%	4.70%	16.92%	13.34%	-30.71%	-5.90%	13.39%	-7.20%	12.25%	26.98%	16.89%
Colombo	6.92%	89.08%	-60.61%	-6.54%	-76.19%	-32.91%	5.84%	-19.77%	20.92%	21.19%	50.00%
Gampaha	20.26%	-21.18%	120.00%	34.42%	189.47%	27.50%	43.36%	1.92%	-49.64%	44.97%	-22.06%
Kalutara	7.39%	-3.40%	58.33%	16.01%	-45.83%	-5.58%	-3.97%	14.57%	230.00%	16.17%	18.52%
Central	13.32%	1.75%	-45.61%	60.00%	-30.77%	-6.58%	20.13%	14.76%	-19.30%	27.99%	2050.00%
Kandy	16.43%	-13.04%	-11.43%	91.63%	4.55%	-26.36%	21.94%	10.81%	-37.78%	41.75%	7950.00%
Matale	21.51%	31.54%	-100.00%	-52.05%	-71.43%	105.41%	42.37%	-39.47%	16.67%	-5.16%	50.00%
Nuwara Eliya	3.79%	1.23%	-100.00%	56.82%	-80.00%	14.29%	-9.91%	125.00%	83.33%	11.21%	100.00%
Southern	7.96%	-1.90%	27.08%	25.79%	-6.67%	100.41%	14.37%	14.93%	47.06%	43.97%	-50.08%
Galle	5.46%	-20.11%	118.18%	1.73%	-14.29%	77.48%	31.91%	18.37%	44.44%	65.34%	-3.91%
Matara	11.10%	6.48%	94.12%	32.33%	-37.50%	151.69%	-3.93%	19.74%	70.59%	22.76%	-72.25%
Hambantota	8.01%	17.85%	-80.00%	107.14%		51.22%	20.00%	-11.11%	25.00%	33.86%	-86.36%
North Western	6.69%	-3.26%	179.55%	23.08%	5.00%	68.29%	29.37%	11.17%	27.08%	37.24%	-72.27%
Kurunegala	4.58%	-9.17%	87.10%	53.98%	10.00%	82.73%	23.92%	24.79%	23.68%	58.44%	-85.39%
Puttalam	12.25%	14.42%	400.00%	-19.06%	0.00%	38.89%	45.33%	-14.52%	40.00%	-6.42%	103.85%
North Central	3.16%	-8.63%	550.00%	37.14%	42.86%	33.33%	8.62%	56.14%	-6.67%	116.06%	-76.47%
Anuradhapura	4.72%	-5.46%	1400.00%	2.63%		63.27%	-5.00%	113.79%	0.00%	105.20%	-94.12%
Polonnaruwa	-0.79%	-16.69%	266.67%	127.59%	-100.00%	-23.08%	38.89%	-3.57%	-20.00%	157.78%	
Uva	2.55%	-8.10%	-42.86%	34.59%	-42.86%	15.25%	55.88%	-1.12%	123.08%	82.76%	-49.23%
Badulla	2.16%	-5.01%	-70.59%	-10.10%	-50.00%	12.00%	45.60%	6.15%	84.62%	78.01%	-64.62%
Moneragala	3.52%	-15.27%	0.00%	164.71%	-33.33%	33.33%	84.44%	-20.83%		95.71%	
Sabaragamuwa	2.42%	-26.66%	21.07%	-16.44%	-7.14%	47.44%	26.05%	32.26%	64.00%	87.83%	78.51%
Ratnapura	-1.56%	-29.10%	5.04%	-30.26%	-30.00%	7.14%	70.39%	37.88%	27.27%	50.00%	157.86%
Kegalle	7.44%	-22.57%	233.33%	-10.61%	50.00%	94.44%	-9.37%	28.09%	92.86%	126.75%	16.67%
Sri Lanka	8.15%	-5.71%	26.39%	16.77%	-22.71%	20.27%	18.82%	4.50%	17.34%	41.12%	1.17%

Source: Labour Force Survey 1992-93 (Preliminary Report) and Labour Force Survey 1985-86, Department of Census and Statistics

Note: based on subset of 7 provinces (Sri Lanka minus Northern and Eastern provinces)

TABLE A1.2.10 District Employment Shares and Growth 1985-1992

	1992 jobs ('000)	share	change '85-'92 (%)		1992 jobs ('000)	share	change '85-'92 (%)
Sri Lanka	4924	1.000	8.2				
Western	1456	0.296	11.6	North Western	662	0.134	6.7
Colombo	624	0.127	6.9	Kurunegala	470	0.096	4.6
Gampaha	533	0.108	20.3	Puttalam	192	0.039	12.3
Kalutara	299	0.061	7.4	North Central	369	0.075	3.2
Central	803	0.163	13.3	Anuradhapura	268	0.055	4.7
Kandy	399	0.081	16.4	Polonnaruwa	100	0.020	-0.8
Matale	166	0.034	21.5	Uva	386	0.078	2.6
Nuwara Eliya	238	0.048	3.8	Badulla	274	0.056	2.2
Southern	685	0.139	8.0	Monaragala	112	0.023	3.5
Galle	290	0.059	5.5	Sabaragamuwa	564	0.115	2.4
Matara	240	0.049	11.1	Ratnapura	303	0.061	-1.6
Hambantota	155	0.032	8.0	Kegalle	261	0.053	7.4

TABLE A1.2.11 Shares of Gross Regional Product and Employment

	Share of GDP	Share of Jobs
Western	0.511	0.296
Central	0.114	0.163
Southern	0.095	0.139
North Western	0.108	0.134
North Central	0.044	0.075
Uva	0.050	0.078
Sabaragamuwa	0.079	0.115

TABLE A1.2.12 Employment Shifts, 1985-1992

	Total Jobs	Sector 3		Total Jobs	Sector 3
Western	+	-	North Western	-	+
Colombo	-	-	Kurunegala	-	+
Gampaha	+	+	Puttalam	+	-
Kalutara	-	-	North Central	-	+
Central	+	+	Anuradhapura	-	-
Kandy	+	+	Polonnaruwa	-	+
Matale	+	-	Uva	-	+
Nuwara Eliya	-	+	Badulla	-	-
Southern	-	+	Monaragala	-	+
Galle	-	-	Sabaragamuwa	-	-
Matara	+	+	Ratnapura	-	-
Hambantota	-	+	Kegalle	-	-

TABLE A1.2.13 Population Shifts, 1985-1992

	1981 1990	1990 2000		1981 1990	1990 2000
Western	-	+	Eastern	+	-
Colombo	-	-	Batticaloa	+	-
Gampaha	-	+	Ampara	+	-
Kalutara	-	+	Trincomalee	+	-
Central	-	+	North Western	-	-
Kandy	-	+	Kurunegala	-	-
Matale	-	-	Puttalam	+	+
Nuwara Eliya	-	+	North Central	+	+
Southern	-	+	Anuradhapura	+	-
Galle	-	+	Polonnaruwa	+	+
Matara	-	-	Uva	-	+
Hambantota	+	+	Badulla	-	+
Northern	+	-	Monaragala	+	-
Jaffna	-	-	Sabaragamuwa	+	+
Mannar	+	-	Ratnapura	+	-
Killinochchi	+	-	Kegalle	+	+

TABLE A1.2.14 Income and Income Distribution 1990-91
(constant 1993 Rs)

Provinces Districts	Average Monthly Income Per Household	Average Monthly Income Per Capita	Index of Per Capita Income	Median Household Income	Gini Coeff. for Household Income
Sri Lanka	4969	991	1.000	3426	0.4259
Western	6670	1326	1.338	4430	0.4316
Colombo	8354	1625	1.640	4864	0.5052
Gampaha	5762	1170	1.181	4453	0.3439
Kalutara	4743	949	0.958	3602	0.2971
Central	4001	804	0.811	3031	0.3745
Kandy	3983	783	0.790	2948	0.3636
Matale	4099	834	0.842	2593	0.4069
Nuwara Eliya	3965	827	0.835	3272	0.3570
Southern	4542	862	0.870	3357	0.4033
Galle	5009	969	0.977	3664	0.3786
Matara	4407	826	0.833	3004	0.4523
Hambantota	3857	721	0.727	2974	0.3356
North Western	4466	932	0.941	3007	0.4375
Kurunegala	4502	945	0.953	2947	0.4661
Puttalam	4375	902	0.910	3161	0.3782
North Central	3766	771	0.778	3025	0.3200
Anuradhapura	3639	757	0.764	2892	0.3280
Polonnaruwa	4070	799	0.806	3311	0.3239
Uva	4403	874	0.881	3345	0.3867
Badulla	4175	837	0.845	3217	0.3835
Moneragala	4887	949	0.958	3660	0.3916
Sabaragamuwa	4068	808	0.815	2933	0.3821
Ratnapura	3713	724	0.730	2722	0.3808
Kegalle	4493	910	0.918	3245	0.3894

Source: Household Income and Expenditure Survey, 1990-91, Department of Census and Statistics
Note: income adjusted from 1990 to 1993 using Colombo CPI (Central Bank Annual Report 1993)

TABLE A1.3.1 Population by Districts (thousands)

	1981	1985	1988	1990	1992	2000	1981-90 change	1981-90 avg. rate	1990-2000 change	1990-2000 avg. rate	Urban % 1992
Sri Lanka	14,510	15,515	16,018	16,772	17,321	19,058	2,262	1.62%	2,286	1.29%	20.79%
Western	3,974	4,132	4,211	4,329	4,412	4,925	355	0.96%	596	1.30%	46.39%
Colombo	1,758	1,831	1,868	1,923	1,962	2,168	165	1.00%	245	1.21%	73.94%
Gampaha	1,364	1,419	1,447	1,488	1,517	1,708	124	0.97%	220	1.39%	26.70%
Kalutara	852	881	896	918	933	1,049	66	0.83%	131	1.34%	20.50%
Central	2,179	2,166	2,159	2,149	2,142	2,463	-30	-0.15%	314	1.37%	10.94%
Kandy	1,244	1,232	1,227	1,218	1,212	1,395	-26	-0.23%	177	1.37%	13.54%
Matale	376	390	397	408	415	464	32	0.91%	56	1.29%	10.00%
Nuwara Eliya	559	543	535	523	515	604	-36	-0.74%	81	1.45%	5.56%
Southern	1,977	2,063	2,106	2,170	2,215	2,469	193	1.04%	299	1.30%	14.59%
Galle	855	883	896	917	931	1,044	62	0.78%	127	1.31%	21.17%
Matara	703	725	736	753	765	856	50	0.77%	103	1.29%	10.57%
Hambantota	419	455	473	500	520	569	81	1.98%	69	1.30%	8.71%
Northern	1,081	1,177	1,225	1,297	1,351	1,453	216	2.04%	156	1.14%	25.74%
Jaffna	856	860	863	866	868	970	10	0.13%	104	1.14%	30.75%
Mannar	93	109	117	129	139	144	36	3.70%	15	1.11%	13.19%
Vavuniya	77	93	101	113	123	127	36	4.35%	14	1.17%	17.61%
Mullaitivu	55	71	79	91	102	102	36	5.75%	11	1.15%	9.91%
Killinochchi		44	65	98	98	110	98		12	1.16%	
Eastern	917	1,037	1,098	1,188	1,258	1,330	271	2.92%	142	1.14%	21.08%
Batticaloa	328	363	380	406	426	455	78	2.40%	49	1.15%	23.13%
Ampara	342	399	428	471	506	527	129	3.62%	56	1.13%	12.43%
Trincomalee	247	275	290	311	327	348	64	2.59%	37	1.13%	31.75%
North Western	1,704	1,820	1,879	1,966	2,029	2,233	262	1.60%	267	1.28%	5.62%
Kurunegala	1,231	1,302	1,337	1,390	1,428	1,576	159	1.36%	186	1.26%	2.95%
Puttalam	473	519	542	576	602	657	103	2.21%	81	1.32%	11.95%
North Central	711	839	904	1,000	1,079	1,138	289	3.86%	138	1.30%	6.85%
Anuradhapura	504	588	630	693	744	786	189	3.60%	93	1.27%	6.62%
Polonnaruwa	207	251	274	307	335	352	100	4.48%	45	1.38%	7.37%
Uva	934	978	1,000	1,033	1,056	1,176	99	1.13%	143	1.30%	5.66%
Badulla	682	687	689	693	695	792	11	0.18%	99	1.34%	7.60%
Moneragala	252	291	311	340	363	384	88	3.38%	44	1.22%	1.92%
Sabaragamuwa	1,033	1,303	1,438	1,640	1,817	1,871	607	5.27%	231	1.33%	6.97%
Ratnapura	787	842	869	910	940	1,033	123	1.63%	123	1.28%	6.84%
Kegalle	246	461	569	730	930	838	484	12.85%	108	1.39%	6.71%

Sources: Census of Population 1981, Dept> of Census and Statistics; Household Income and Expenditure Survey 1990/91, Central Bank of Sri Lanka

Notes: Figures for Northern and Eastern provinces after 1981 are estimates

Figures for 1985 and 1988 are interpolations between 1981 and 1990

Figures for 1992 are extrapolations based on the 1981-90 growth rates

TABLE A1.3.2 Paddy Production, Import and Consumption

Year	Production Paddy ('000 Tons)	Production Rice equivalent(4) ('000 Tons) (1)	Area sown ('000 ha.) (2)	Area harvested ('000 ha.)	Fertilizer Used ('000 Tons) (3)	(kg./ha.) (3)/(2)	(kg/ton) (3)/(1)	Yield / hectare (kg.)	Imports Rice ('000 Tons) (4)	Domestic Con-sumption Rice ('000 Tons) (5)	Population ('000) (6)	(5)/(6)	Available Rice ('000 Tons) (1)+(4)
1985	2,661	1,810	882	865	203	230	112	3,465	182	1,790	15,842	113	1,992
1986	2,588	1,760	895	835	233	260	132	3,500	220	1,667	16,127	103	1,980
1987	2,128	1,446	781	679	217	278	150	3,564	102	1,545	16,361	94	1,549
1988	2,477	1,684	868	816	226	260	134	3,413	199	1,670	16,586	101	1,883
1989	2,063	1,403	727	690	238	327	170	3,374	139	1,544	16,806	92	1,542
1990	2,538	1,726	857	828	161	188	93	3,453	116	1,724	16,993	101	1,842
1991	2,389	1,625	817	791	179	219	110	3,398	133	1,727	17,247	100	1,757
1992	2,340	1,591	803	766	208	259	131	3,428	237	1,707	17,405	98	1,828
1993	2,570	1,748	835	820	248	297	142	3,511	207	1,697	17,619	96	1,955
1994	2,684	1,825	930	897	249	268	137	3,363	58	1,691	17,865	95	1,883
Total	24,438	16,618							1,594	16,760			18,211

Source : Annual Report 1994, Central Bank of Sri Lanka

Agricultural Statistics of Sri Lanka 1992, Department of Census & Statistics, Ministry of Policy Planning & Implementation

TABLE A1.4.1 Capital and Output 1990 (constant 1993 Rs)

	Total employees	Fixed Capital	Total Output	Average Capital / Output Ratio	Average Capital per Worker	Value Added per Worker
Western	328,294	130,059,633,553	116,722,250,591	1.114	396,168	161,609
Colombo	209,182	117,530,601,275	63,809,171,727	1.842	561,858	157,557
Gampaha	106,891	12,252,768,728	51,141,125,107	0.240	114,629	180,211
Kalutara	12,221	276,263,549	1,771,953,757	0.156	22,606	68,253
Central	45,672	2,084,230,285	9,642,480,333	0.216	45,635	91,124
Kandy	21,502	826,271,777	3,415,911,886	0.242	38,428	81,571
Matale	10,290	534,368,921	771,311,791	0.693	51,931	34,964
Nuwara-Eliya	13,880	723,589,586	5,455,256,655	0.133	52,132	147,557
Southern	22,935	1,059,283,623	5,147,253,036	0.206	46,186	88,158
Galle	10,284	446,102,730	2,505,450,776	0.178	43,378	113,055
Matara	9,461	396,608,331	2,378,509,218	0.167	41,920	80,429
Hambantota	3,190	216,572,562	263,293,042	0.823	67,891	30,815
Northern	---	---	---	---	---	---
Eastern	---	---	---	---	---	---
North Western	25,226	1,651,749,307	5,627,636,073	0.294	65,478	81,085
Kurunegala	12,889	608,791,429	2,484,943,225	0.245	47,233	72,170
Puttalam	12,337	1,042,957,877	3,142,692,848	0.332	84,539	90,399
North Central	1,477	194,251,440	860,910,003	0.226	131,518	306,336
Anuradhapura	1,379	57,428,338	348,951,460	0.165	41,645	92,797
Polonnaruwa	98	136,823,101	511,958,543	0.267	1,396,154	3,311,137
Uva	13,723	2,972,556,835	3,362,071,653	0.884	216,611	90,662
Badulla	5,747	185,630,101	1,617,997,512	0.115	32,300	129,771
Moneragala	7,976	2,786,926,733	1,744,074,141	1.598	349,414	62,482
Sabaragamuwa	20,733	3,006,089,414	5,269,761,168	0.570	144,991	146,230
Ratnapura	10,768	1,095,265,727	3,727,127,019	0.294	101,715	191,973
Kegalle	9,965	1,910,823,687	1,542,634,149	1.239	191,754	96,801
Sri Lanka	458,060	151,995,955,357	146,632,362,857	1.037	331,825	153,335

Source: Department of Census and Statistics, Annual Survey of Industries 1991

TABLE A1.5.1 Land Use in the Colombo Urban Area (Hectares)

	Resid - ential	%	Comm'l & Industrial	%	Agri- cultural	%	Water and Marsh	%	Public or Vacant	%	Total
Colombo MC	1838	49	385	10	0	0	98	3	1412	38	3733
Dehiwela/Mount Lavinia MC	1436	68	193	9	50	2	41	2	385	18	2105
Moratuwa UC	1423	61	209	9	148	6	115	5	433	19	2328
Wattala-Mabola UC	185	52	33	9	4	1	111	31	26	7	359
Peliyagoda UC	166	38	89	20	6	1	61	14	113	26	435
Mahara PS	5319	54	21		3860	39	305	3	405	4	9910
Kelaniya PS	1478	62	50	2	280	12	350	15	230	10	2388
Biyagama PS	2277	39	312	5	2597	44	400	7	325	5	5911
Kolonnawa UC	190	34	90	16	42	8	160	29	71	13	553
Kotikawatta-Mullerlyawa PS	2405	42	278	6	1023	18	1241	22	727	13	5674
Kaduwela PS	1176	13	277	3	6663	74	415	5	482	5	9013
Kotte UC	730	44	34	2	56	3	523	31	327	20	1670
Maharagama PS	1185	58	55	3	336	17	166	8	287	14	2029
Kesbewa PS	3338	55	115	2	1970	32	266	4	406	7	6095
Wattala PS	2288	30	80	1	3230	42	1759	23	328	4	7685
Total Urban Area	25434	42	2221	4	20265	34	6011	10	5957	10	59888

Source: Urban Development Authority and Local Authorities

TABLE A2.3.1 Details of Berths at Major Ports in India

Port	Type of Berth	No.	Draft Unit : m	Length Unit : m	Max. size of ship Unit : DWT	Percentage Occupancy 1990-91	Percentage Occupancy 1991-92
Kandla	General Cargo Jetties	6	9.1	226	54,000	99%	99%
	Oil Jetty-I	1	10.4	213	40,000	83%	90%
	Oil Jetty-II	1	9.1	192	28,000	48%	42%
	Oil Jetty-III	1	9.4	213	40,000	82%	92%
	S.B.M.(Vadinar)	1	22.0	-	280,000	57%	63%
Bombay	Indira Dock (Container Berth)	8(3)	8.5-10.7	224	loa : 600 feet	80%	63%
	Victoria Dock	14	7.3-7.9	152	loa : 460 feet	69%	56%
	Princes Dock	8	7.3	212	loa : 500 feet	84%	65%
	Butcher Island	4	11.6-14.3	244-493	80,000	70%	77%
	Pir Pau Oil Pier	1	9.7	174	16,000	72%	64%
J.L.Nehru	Container	3	13.5	680	3rd Generation	19%	51%
	Dry Bulk	2	13.5	500	70,000	70%	66%
	Service		13.5	212	50,000		
Mormugao	Port Craft	1	4.3	90	-	-	-
	General Cargo		6.0	90	2,000	8%	9%
	General Cargo(Partly from Bollard No.14-16)		8.5	65	1,000	14%	11%
	General Cargo		8.5	159	25,000	76%	75%
	Ore/MOHP		8.5	223	30,000	47%	57%
	Barge Berth		3.5	100	-	-	-
	Oil Berth		12.0	116	35,000	73%	81%
	MOHP		13.0	222	275,000	72%	61%
	General Cargo		10.0	250	34,000	63%	65%
New Mangalore	General	7	7.0-10.1	125-198	2,000		37%-76%
	KLOCL	1	12.5	285	6,000	70%	72%
	Oil Jetty	1	10.1	330	3,000	32%	33%
Cochin	Break Bulk	6	9.1	152-183	-	37%-59%	28%-43%
	Fertilizer	2	8.1-8.5	152-207	-	33%,37%	17%,32%
	Oil Terminal	1	9.1-10.7	198-440	120,000	81%-85%	82%,84%
	Tanker Berth	2	9.1-10.7	-	-	56%	55%
	Container	2	9.1	152	-	22%	28%
Tuticorin	General Cargo Berth	6	8.2	168-192	-	87%-93%	79%-89%
	Oil Jetty	1	8.2	228		66%-80%	77%,81%
	Coal Jetty	1	8.2	235	46,153	29%	35%
	Passenger Jetty	1	4.5	-			
Madras	General/Dry Bulk	9	8.5-11.0	171-218		82%-89%	68%-88%
	General	4	7.9-9.1	171		73%-98%	64%-96%
	Coal/General	4	7.9-11.0	157-218		80%-92%	72%-78%
	Oil	2	16.0-17.4	304-339		74%,76%	68%,74%
	Ore	1	17.4	222		67%	62%
	Container	3	13.4	600		97%	81%
	Passenger	1	8.5	198		86%	72%
Visakhapatnam	Inner Harbour: Multi-Purpose Berth(Bulk/Container)						
	Berth-I	1	9.5	168	35,000	95%	100%
	Berth-II	1	9.5	168	35,000	90%	97%
	Berth-III	1	9.5	168	35,000	93%	90%
	Berth-IV	1	10.1	168	35,000	98%	99%
	Berth-V	1	10.1	168	35,000	96%	96%
	Berth-VI	1	10.1	168	35,000	93%	93%
	Berth-VII	1	10.2	195	36,000	97%	100%
	Berth-VIII	1	10.2	194	36,000	97%	98%
	Dry Bulk Berth	1	10.1	194	35,000	82%	72%
	Liquid Bulk(Oil) Berth	1	10.1	183	36,000	63%	67%
	Liquid Bulk (Oil) Berth	1	9.8	183	36,000	88%	84%
	Outer Harbour:						
	Dry Bulk Berth(Iron-ore)	1	16.0	270	120,000	65%	39%
	Dry Bulk Berth(Iron-ore)	1	15.3	270	120,000	53%	34%
	Cargo Berth(General-cum-Bulk)	1	13.2	232	60,000	82%	84%
	Terminal Berth(Off-shore Tanker)	1	15.0	280	120,000	43%	50%

Source : Basic Port Statistics of India, Ministry of Surface Transport

TABLE A2.3.1(cont.) Details of Berths at Major Ports in India

Port	Type of Berth	No.	Draft Unit : m	Length Unit : m	Max. size of ship Unit : DWT	Percentage Occupancy 1990-91	Percentage Occupancy 1991-92
Paradip	Dry&Break-Bulk(General Cargo)-I	1	11.0	291	50,000-55,000	89%	73%
	Dry&Break-Bulk(General Cargo)-II	1	11.0	196	50,000-55,000	77%	71%
	Dry&Break-Bulk(General Cargo)-III	1	11.0	200	50,000-55,000	90%	77%
	Iron Ore Berth(Mechanised Dry-bulk)	1	11.9	155	50,000-80,000	51%	40%
	Fertilizer Berth(Mechanised Liquid Bulk)	1	11.0	252	40,000-60,000	32%	27%
	South Quay	1	11.0	215	50,000-55,000	84%	70%
Calcutta	Multi Purpose Berth	1	9.2	133	a. 515',70' Breadth	60%	34%
	Berth 1/KPD	1	9.2	229	a. 515',70' Breadth	71%	63%
	Berth 5/7KPD	1	9.2	108	a. 515',70' Breadth	70%	43%
	Berth 9KPD	1	9.2	151	a. 515',70' Breadth	65%	65%
	Berth 11KPD	1	9.2	136	a. 515',70' Breadth	18%	42%
	Berth 8/KPD	1	9.2	128	a. 515',70' Breadth	66%	54%
	Berth 10KPD	1	9.2	161	a. 515',70' Breadth	74%	68%
	Berth 12KPD	1	9.2	143	a. 515',70' Breadth	47%	45%
	Berth 24KPD	1	9.2	152	a. 515',70' Breadth	59%	43%
	Berth 25KPD	1	9.2	159	a. 515',70' Breadth	56%	49%
	Berth 26KPD	1	9.2	185	a. 515',70' Breadth	68%	53%
	Berth 27KPD	1	9.2	195	a. 515',70' Breadth	76%	64%
	Berth 28KPD	1	9.2	195	a. 515',70' Breadth	73%	74%
	Berth 29KPD	1	9.2	183	a. 515',70' Breadth	71%	61%
	Berth 1NKPD	1	9.2	200	a. 565',80' Breadth	67%	61%
	Berth 2NKPD	1	9.2	157	a. 565',80' Breadth	78%	80%
	Berth 3NKPD	1	9.2	183	a. 565',80' Breadth	78%	79%
	Berth 4NKPD	1	9.2	181	a. 565',80' Breadth	61%	59%
	Berth ANKPD	1	9.2	174	a. 565',80' Breadth	70%	64%
	Berth BNKPD	1	9.2	174	a. 565',80' Breadth	65%	70%
	Container/Gen. Cargo Berth 3KPD	1	9.2	128	a. 565',80' Breadth	30%	31%
	Lash Barges Berth 6KPD	1	9.2	118	a. 565',80' Breadth	49%	82%
	Passenger/Gen. Berth 22KPD	1	9.2	151	a. 565',80' Breadth	59%	31%
	Food/Grains Berth 23KPD	1	9.2	147	a. 565',80' Breadth	57%	51%
	Container Berth 5NSD	1	8.4	183	a. 565',80' Breadth	51%	53%
	Container Berth DNSD	1	8.1	192	a. 565',80' Breadth	59%	59%
	Oil Berth CNSD	1	8.1	152	a. 565',80' Breadth	46%	47%
	Liquid Bulk Berth 1 Buj Buj	1	Up to 9.0	215	625' Length	51%	54%
	Liquid Bulk Berth 2 Buj Buj	1	Up to 9.0	183		30%	40%
	Liquid Bulk Berth 3 Buj Buj	1	Up to 9.0	85		27%	27%
	Liquid Bulk Berth 5 Buj Buj	1	Up to 9.0	183		31%	41%
	Liquid Bulk Berth 8 Buj Buj	1	Up to 9.0	220		36%	35%
Halida	Liquid Bulk Berth	1	8.5	229	LAO 238m	73%	73%
	Dry Liquid Bulk Berth	1	10.0	338		63%	52%
	Dry Bulk Berth	1	10.0	284		80%	85%
	Dry Liquid Bulk Berth	1	10.0	243	LAO 238m	64%	61%
	Dry/Break/Liquid/Bulk	1	10.0	235	Beam 32.3m Allotted to ONGC		
	Dry/Break/Liquid/Bulk	1	10.0	235		63%	42%
	Dry/Break/Container	1	10.0	235		92%	90%
	Dry/Break/Container	1	10.0	443		69%	67%
	Berth No.2 (commissioned Liquid Bulk in	1	10.0				

Source : Basic Port Statistics of India, Ministry of Surface Transport

FIGURE A2.3.1 Plan of Docks at the Port of Bombay

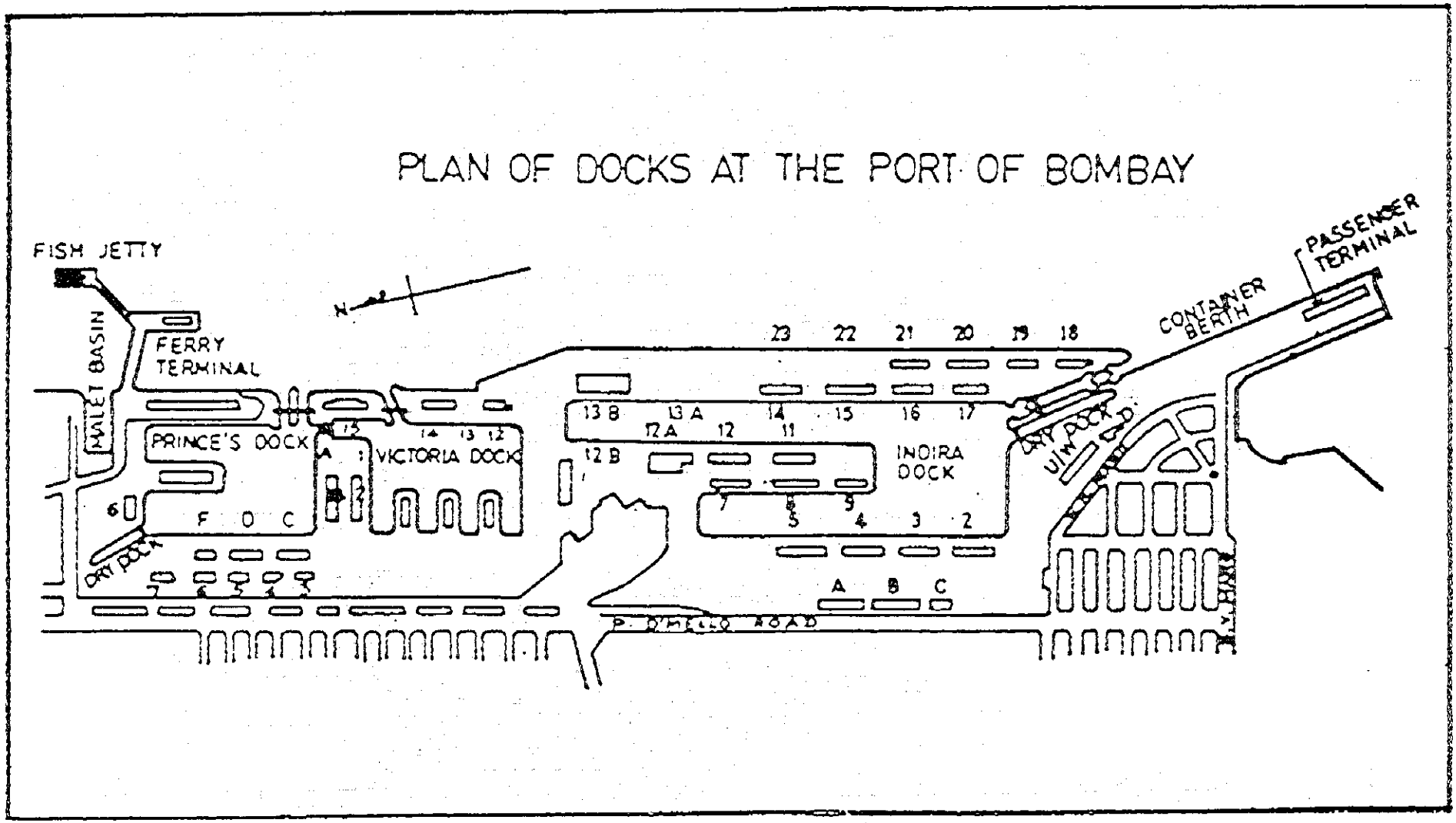


FIGURE A2.3.2 Layout of Jawaharlal Nehru Port

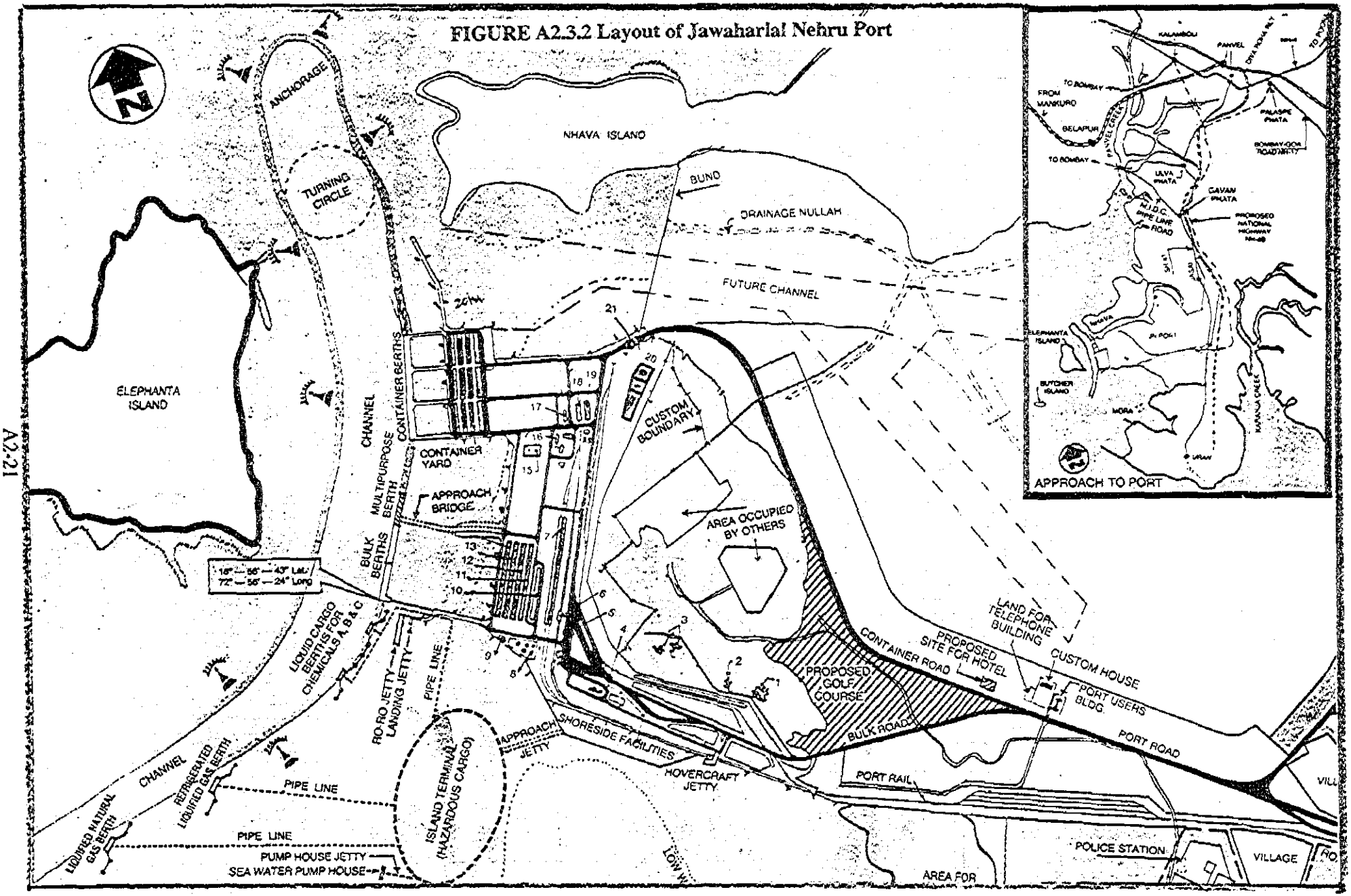


FIGURE A2.3.3 Layout of Cochin Port

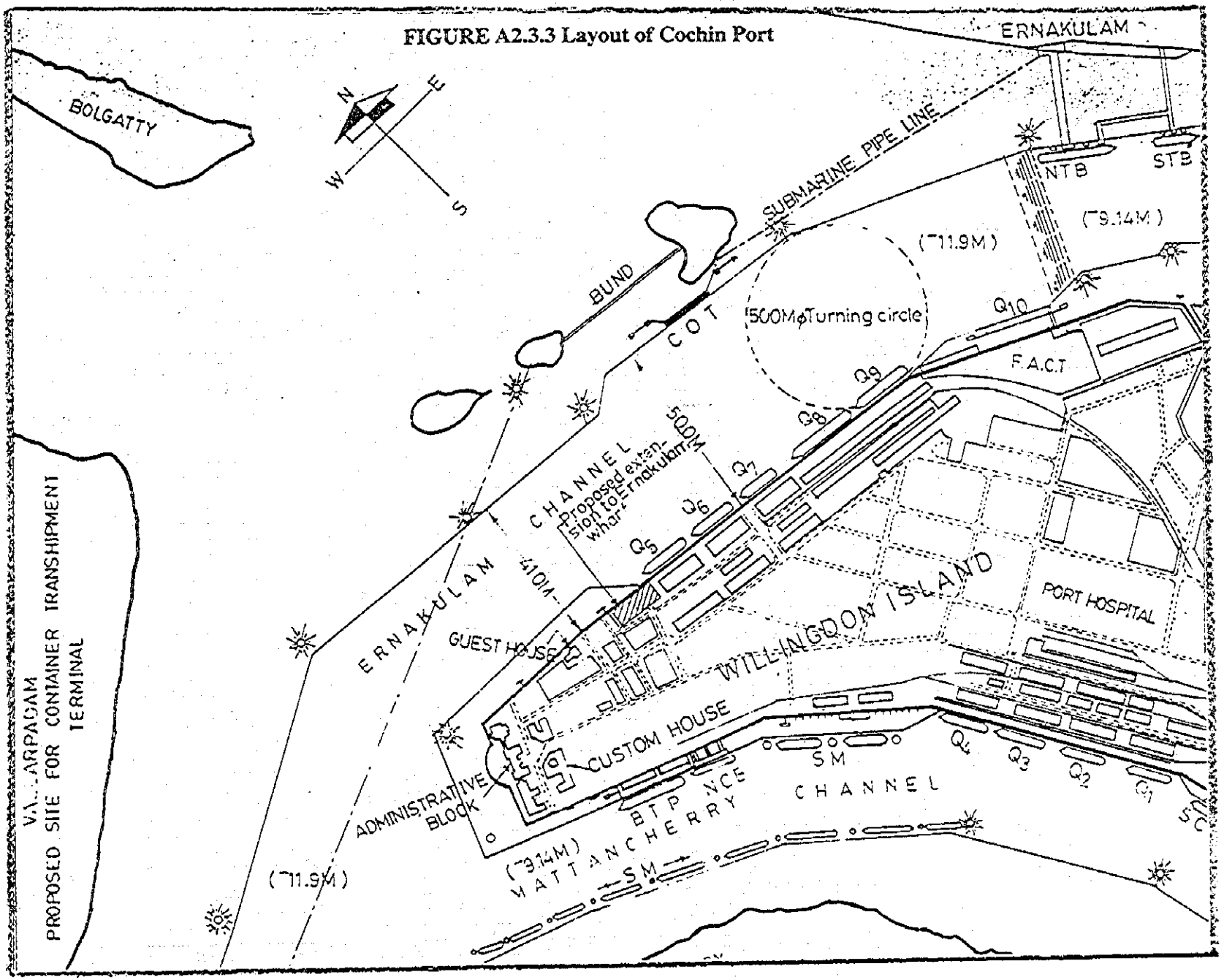


FIGURE A2.3.4 Layout of Madras Port

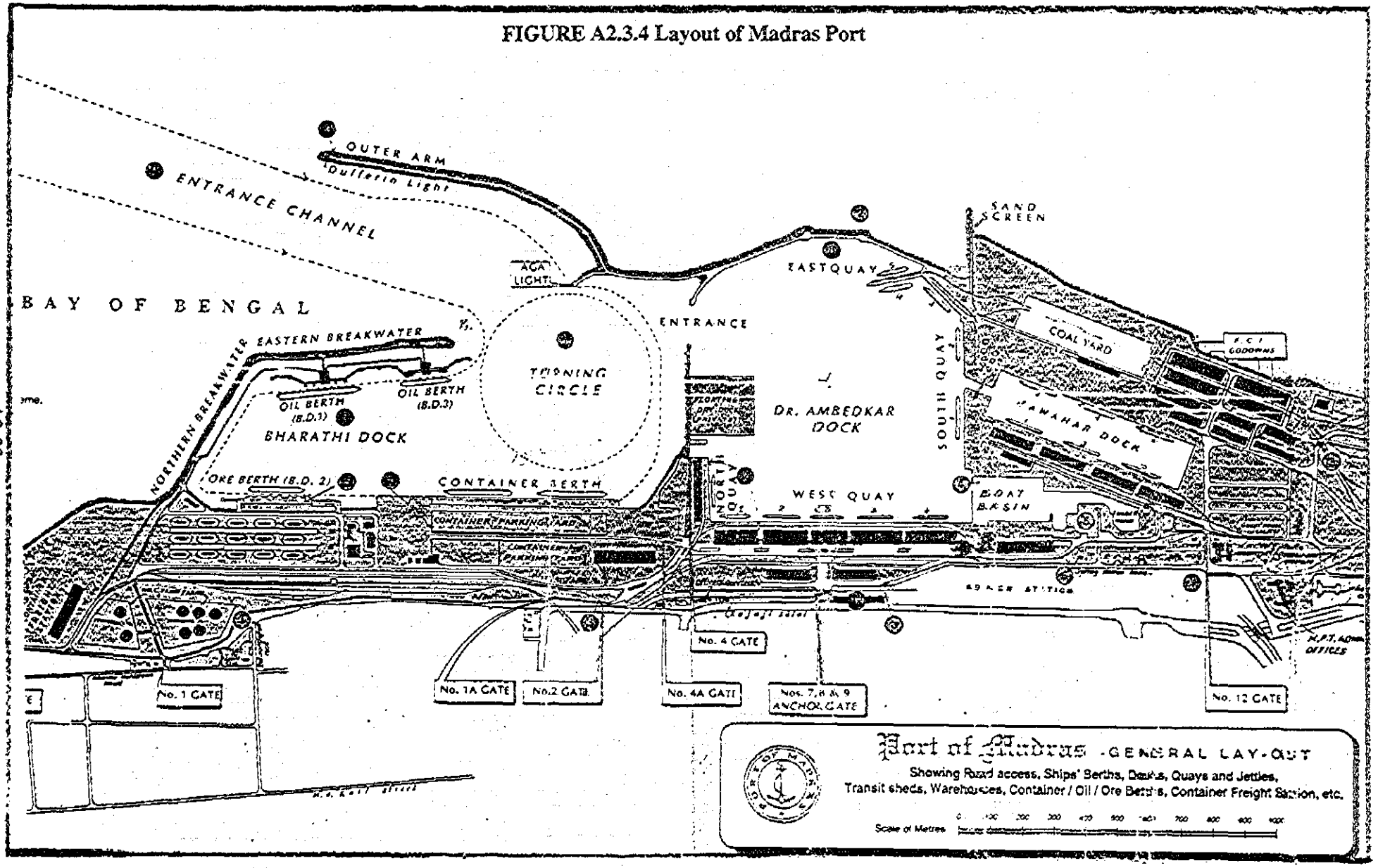
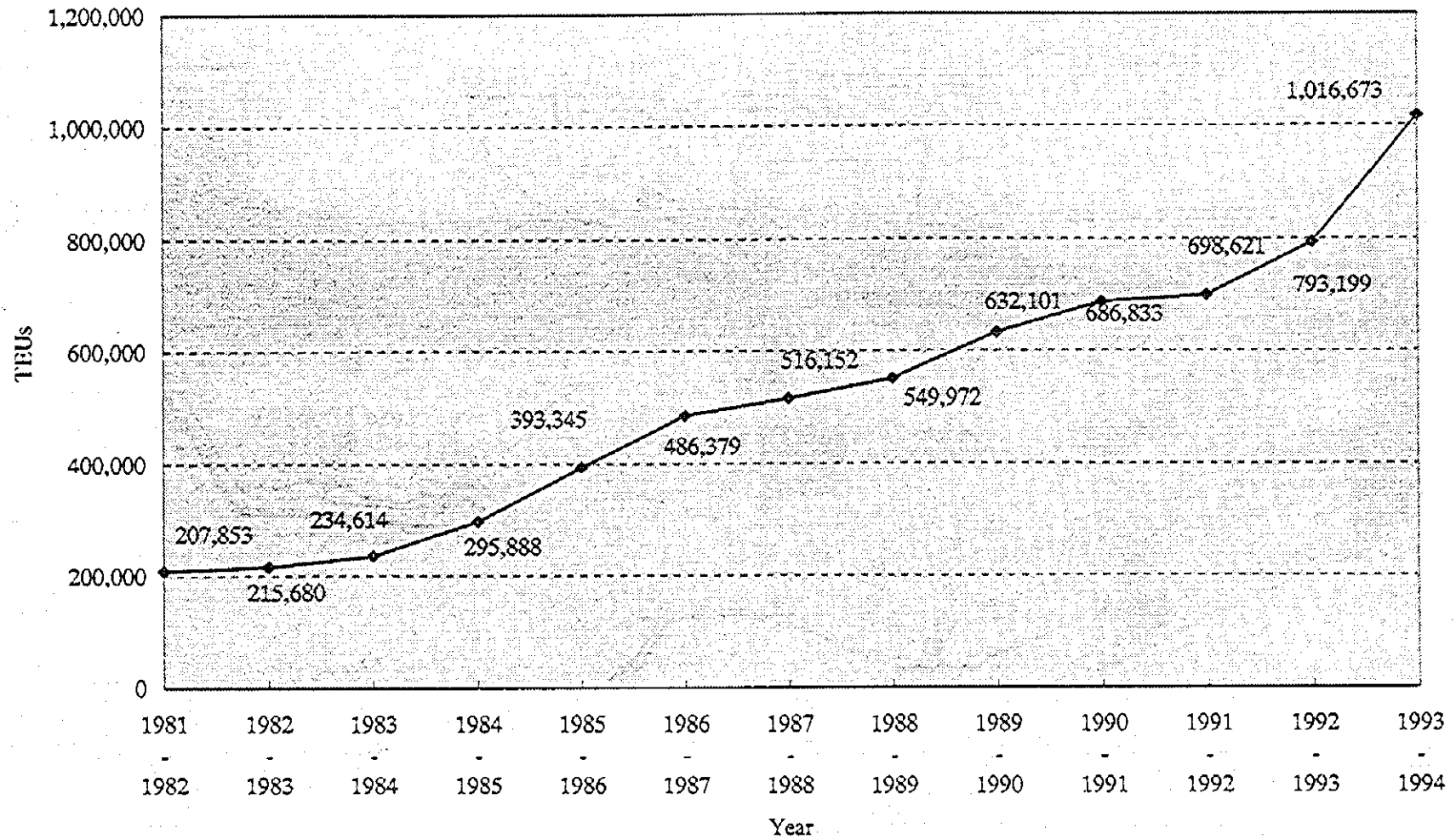


FIGURE A2.3.5 Container Throughput in India



Source : International Containerisation Year Book 1984-1995

FIGURE A2.3.6 Layout of Calcutta Port

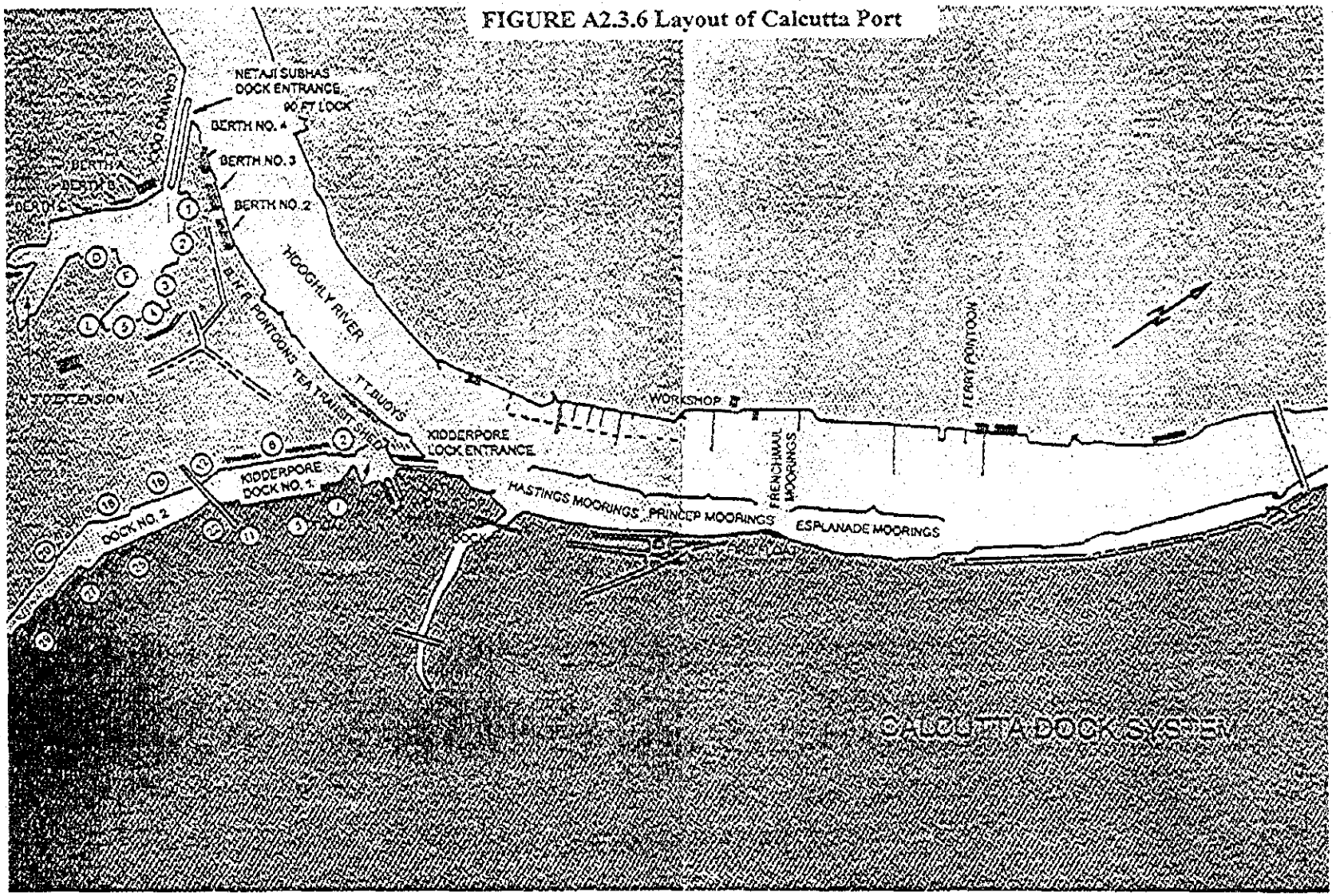
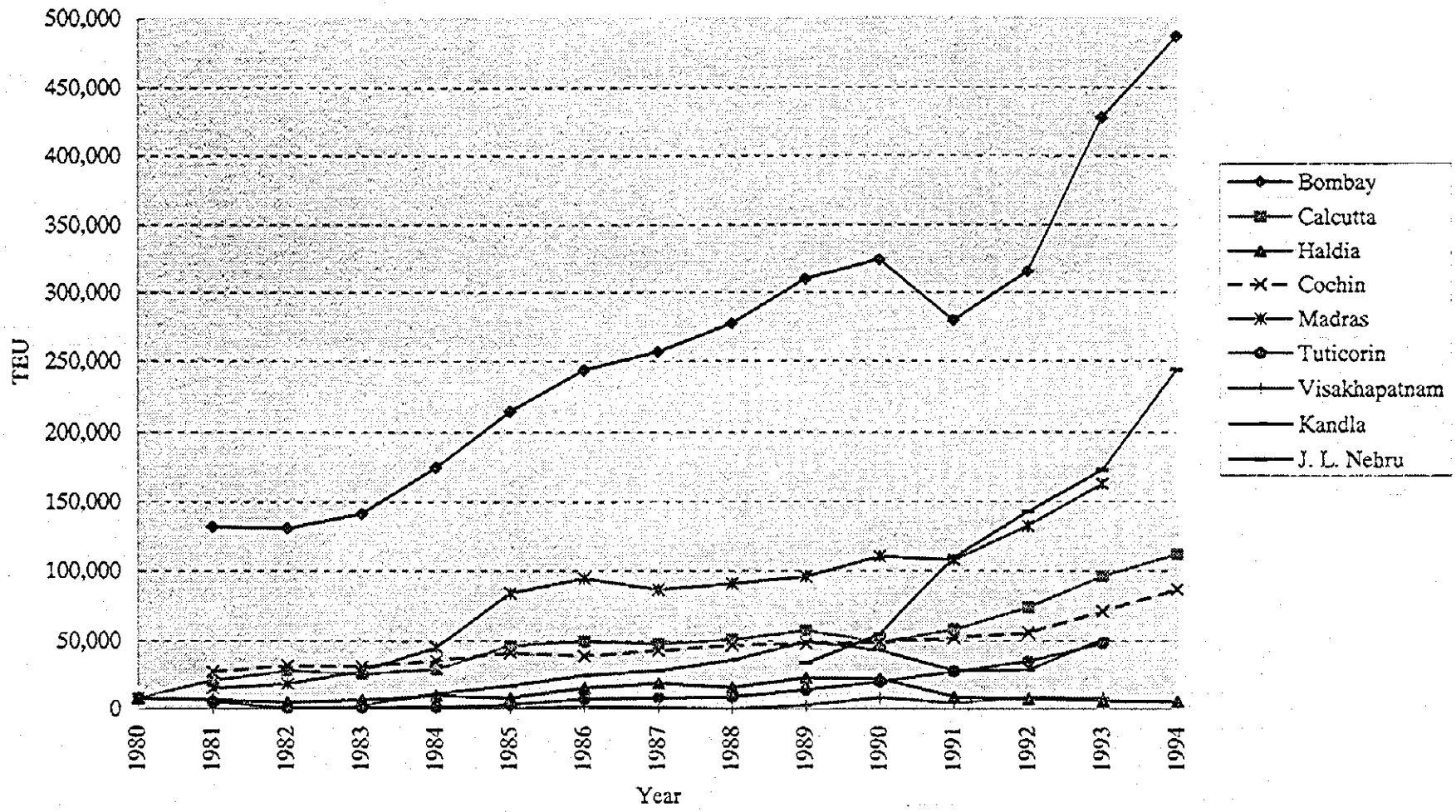


FIGURE A2.3.7 Container Throughput in Major Indian Ports



Source : International Containerisation Year Book 1984-1995
Indian Port Trust

FIGURE A2.3.8 Layout of Haldia Port

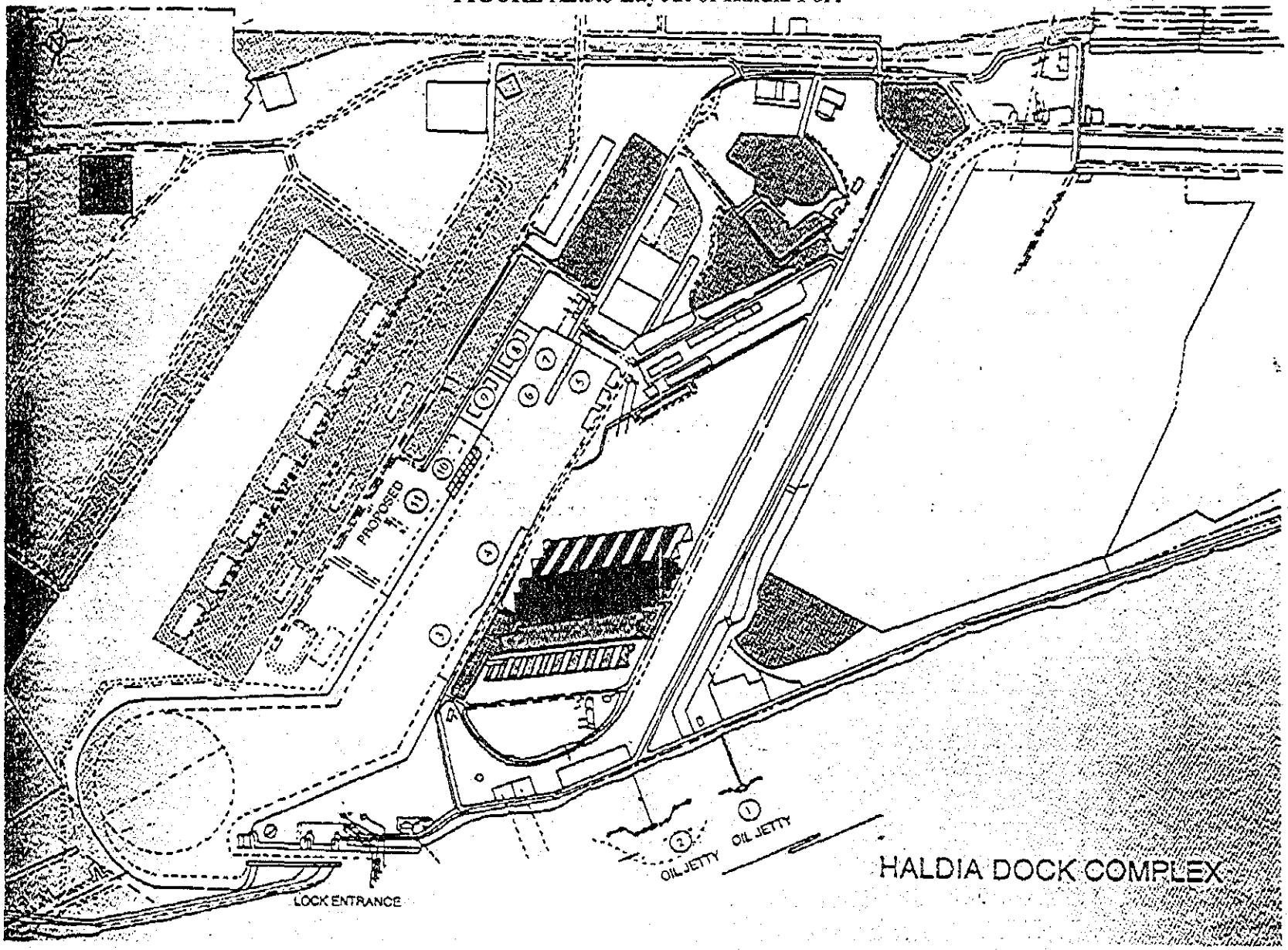


FIGURE A2.3.9 Layout of Visakhapatnam Port

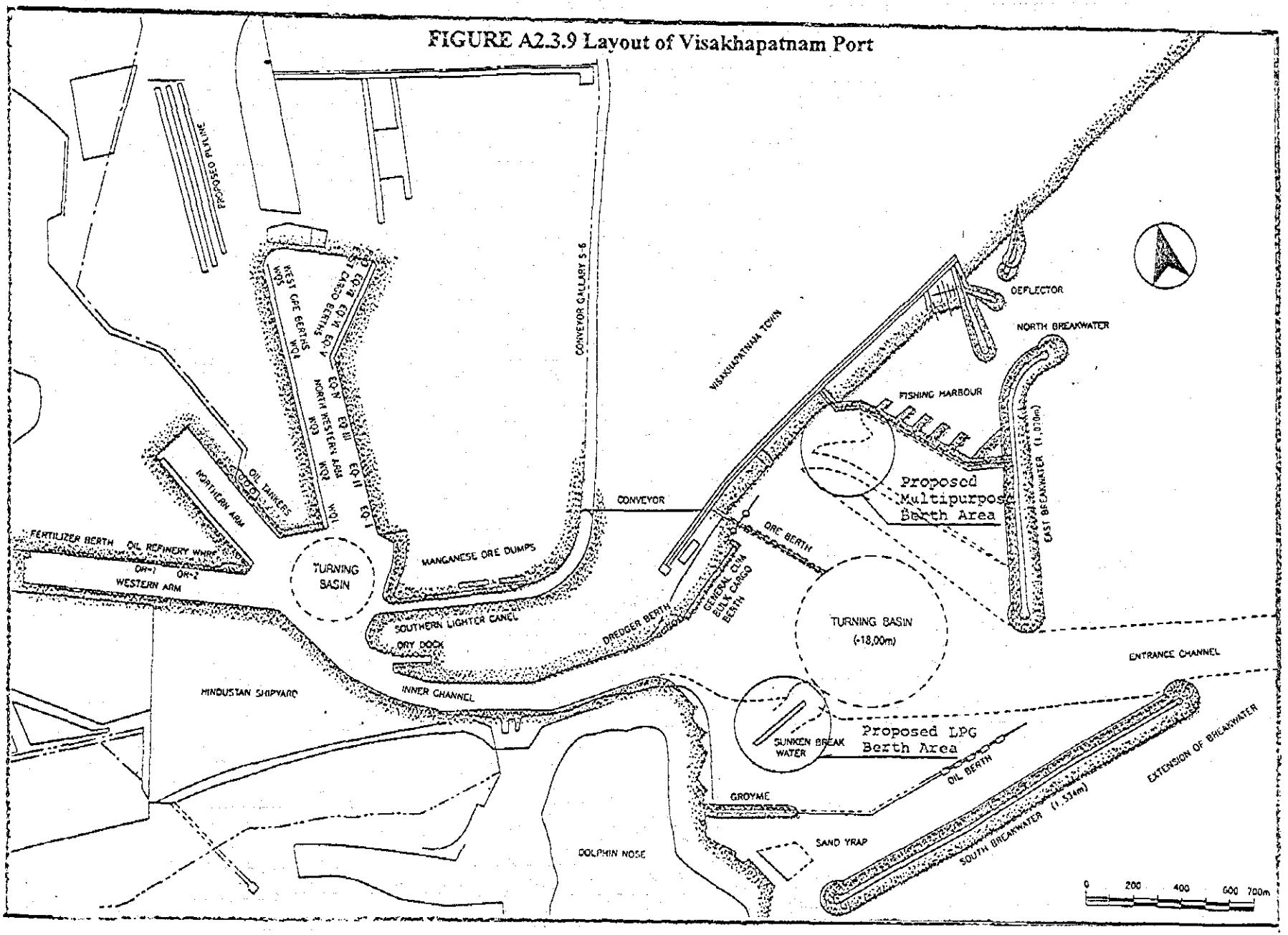


FIGURE A2.3.10 Layout of Tuticorin Port

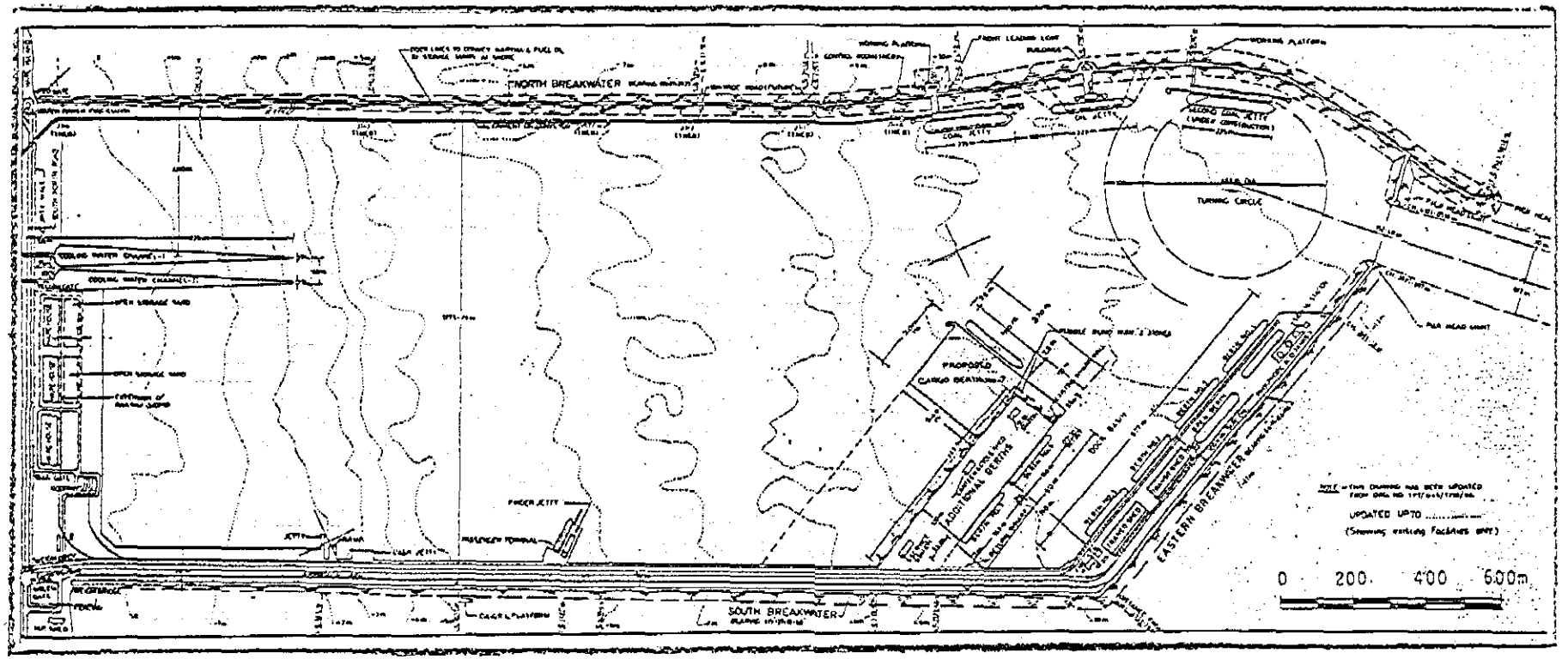


FIGURE A2.3.11 Layout of Kandla Port

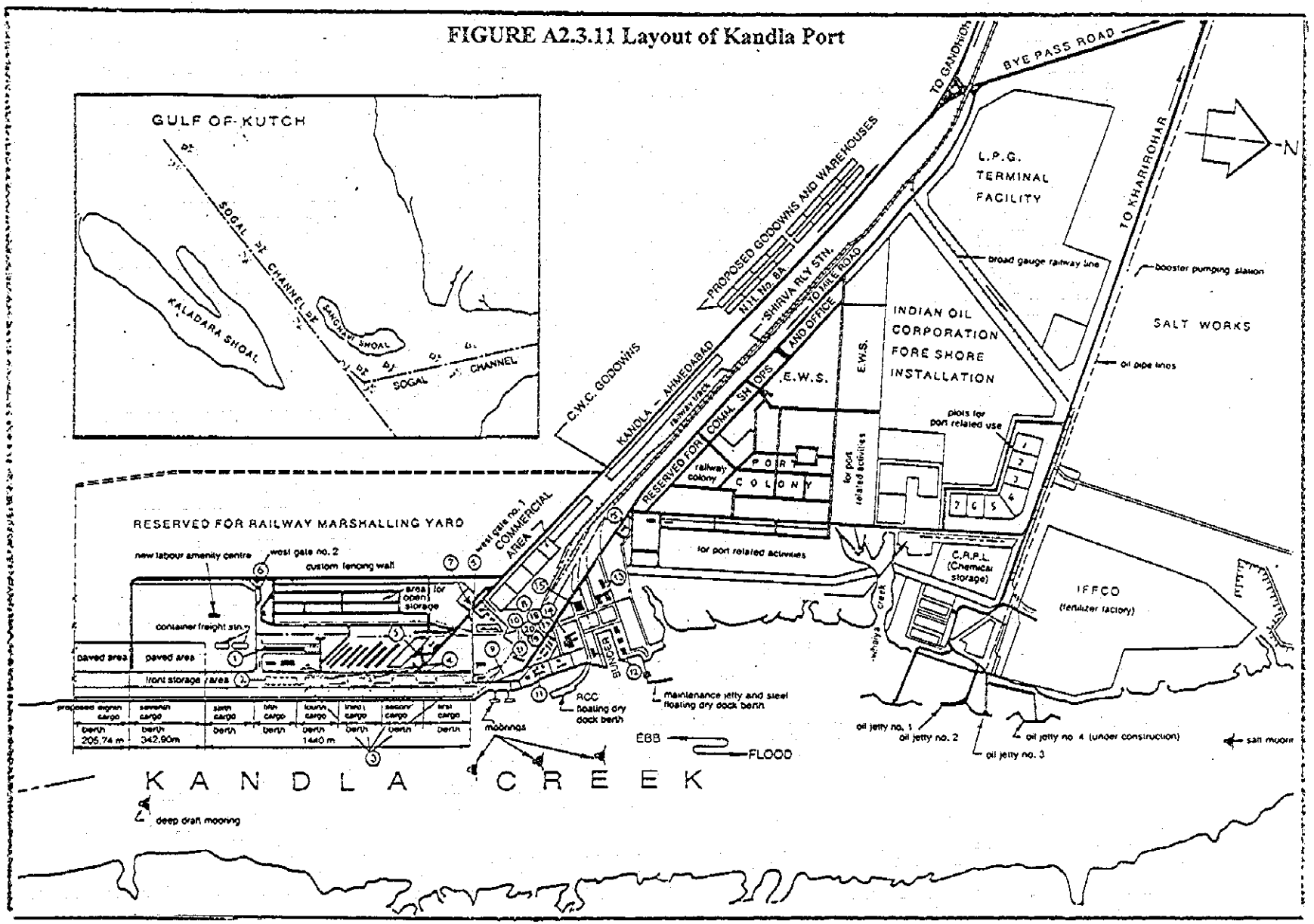


FIGURE A2.3.12 Layout of Karachi Port

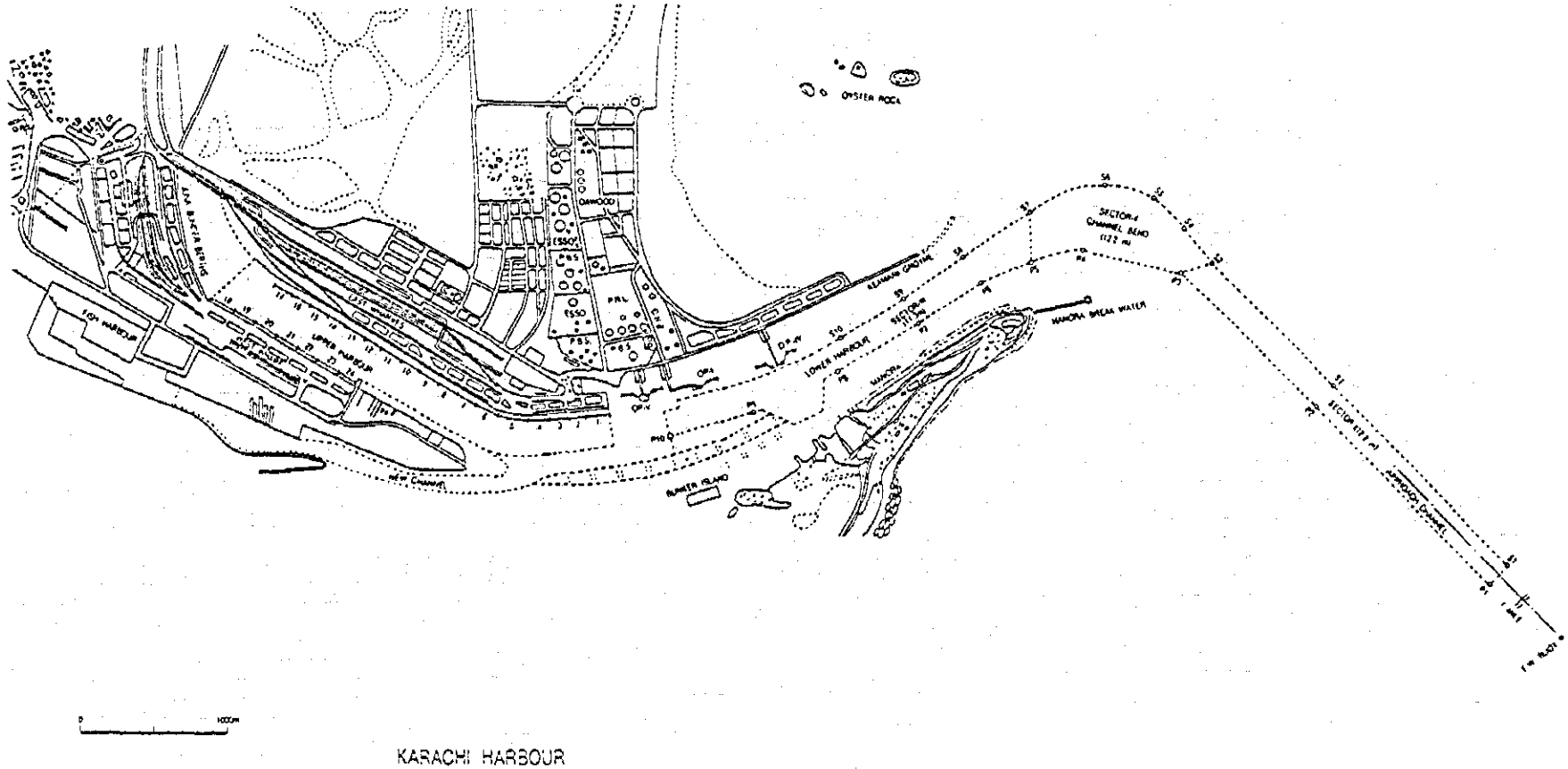
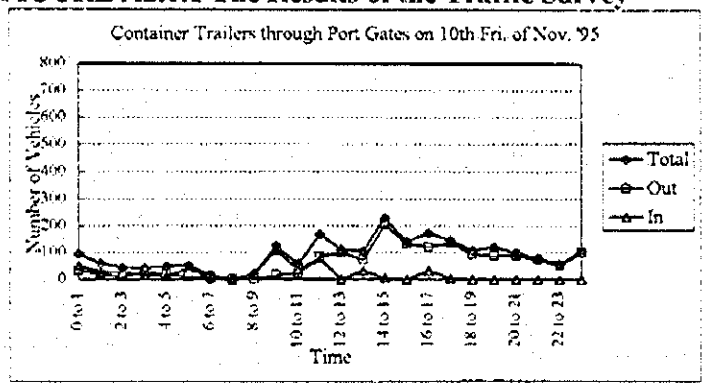
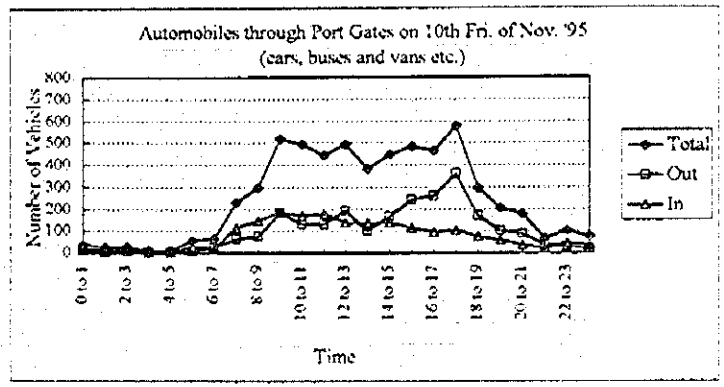
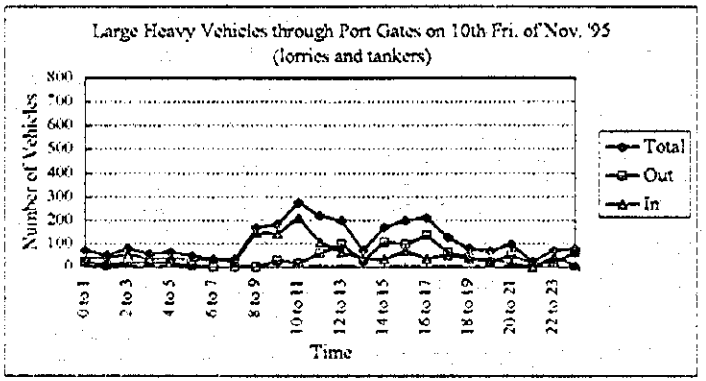
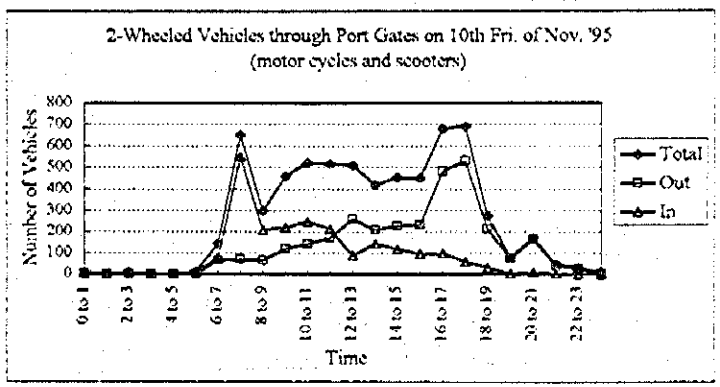


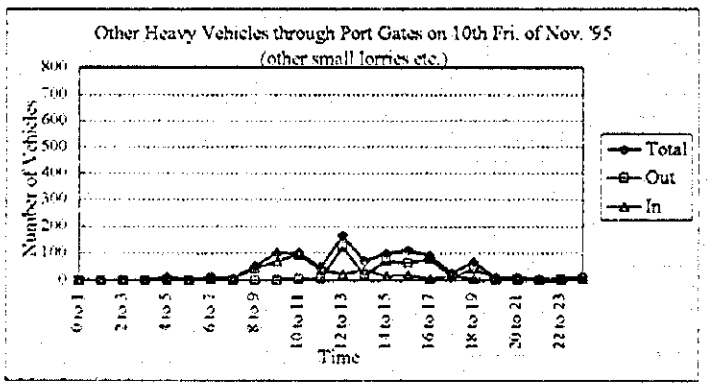
FIGURE A2.6.1 The Results of the Traffic Survey











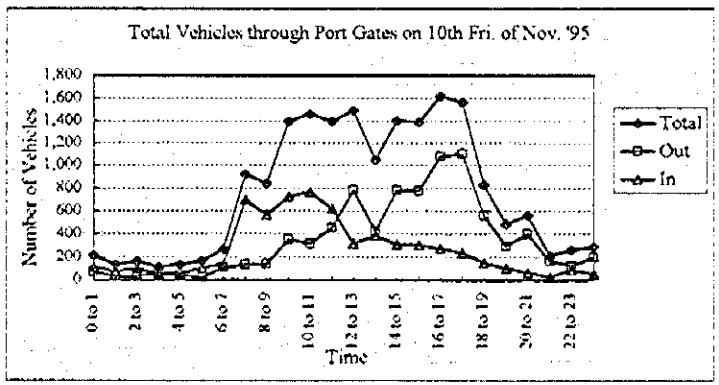
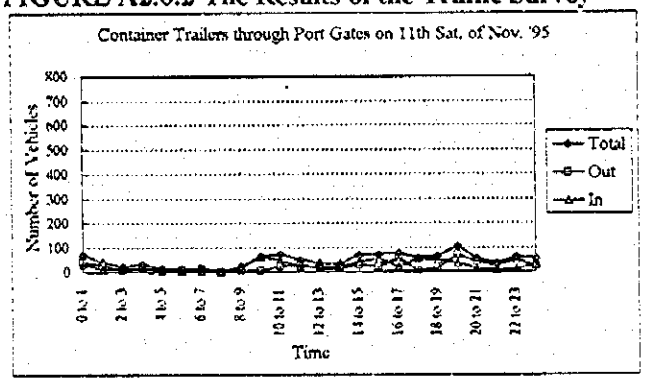
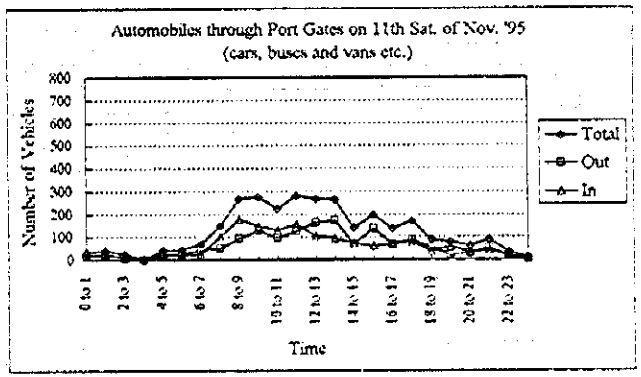
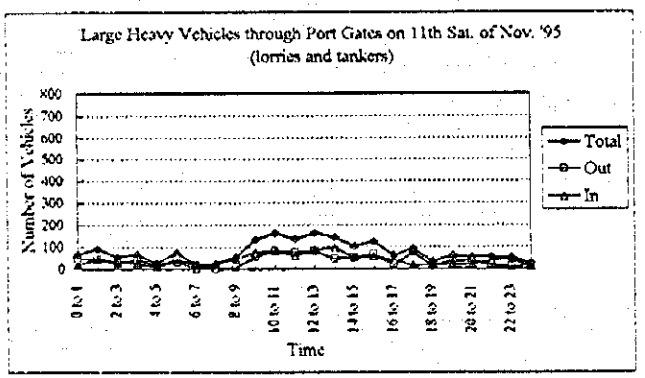
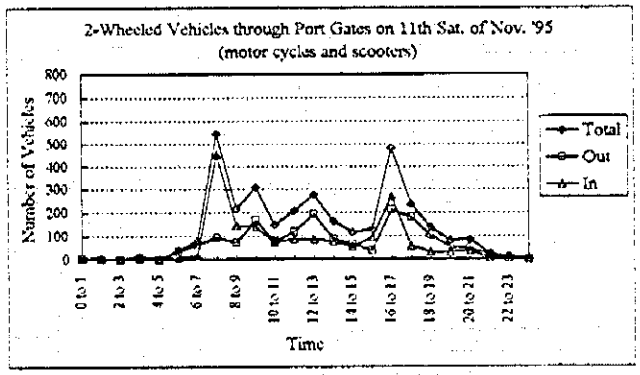


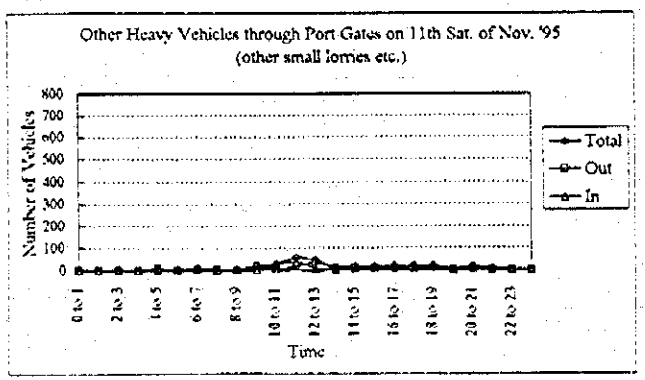
FIGURE A2.6.2 The Results of the Traffic Survey











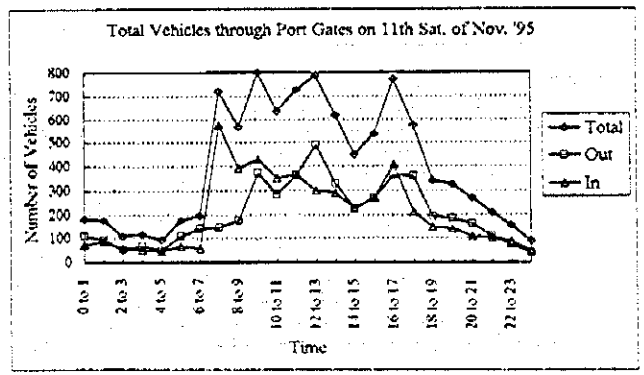


Table A3.1.1(1) Operational Condition of Container Handling Equipment in JCT (from 1993 To 1995)

Name of Machine	Machine No	Year	Utilization	Idle Time	Mach. B.D	Elec. B.D.	M & E B.D.	Maintenance	Accident	Operation Down Time	SUM
Container Crane	03	1993	71	24	0	1	0	4	0	0	100.0
		1994	68	28	0	1	0	3	1	0	101.0
		1995	63	32	0	1	0	3	0	0	100.0
	04	1993	73	23	0	0	0	5	0	0	101.6
		1994	69	28	0	0	0	3	0	0	100.0
		1995	61	32	0	1	0	7	0	0	100.0
	05	1993	67	26	0	1	0	3	3	0	100.0
		1994	69	29	0	1	0	2	0	0	100.6
		1995	67	31	0	0	0	2	0	0	100.0
	06	1993	72	25	0	1	0	2	0	0	100.0
		1994	68	29	0	0	0	4	0	0	100.4
		1995	59	37	0	0	0	4	0	0	100.0
	08	1994	65	32	0	0	0	2	1	0	100.5
		1995	59	36	0	0	0	4	0	0	100.0
	09	1995	46	52	0	1	0	1	0	0	100.0
	10	1995	34	56	0	2	0	1	7	0	100.0
	Average		63.2	32.5	0.0	0.6	0.0	3.1	0.8	0.0	100.0

Name of Machine	Machine No	Year	Utilization	Idle Time	Mach. B.D	Elec. B.D.	M & E B.D.	Maintenance	Accident	Operation Down Time	SUM
Transfer Crane	01		92	5	1	0	0	2	0	0	100.0
	02		92	5	0	0	0	3	0	0	100.0
	03		91	5	0	0	0	4	0	0	100.0
	04		92	5	0	0	0	3	0	0	100.0
	05		88	5	1	0	0	7	0	0	100.0
	06		89	5	2	0	0	3	0	2	102.0
	07		75	4	1	0	0	19	0	0	100.0
	08		76	14	0	0	0	9	0	0	100.0
	09		89	5	3	0	0	3	0	0	100.0
	10		76	5	1	1	0	17	0	0	100.0
	11		91	6	0	0	0	3	0	0	100.0
	12		87	5	0	0	0	7	0	0	100.0
	13		93	5	0	0	0	2	0	0	100.0
	14		92	5	0	0	0	3	0	0	100.0
	15		91	5	0	2	0	2	0	0	100.0
	16		72	26	0	0	0	2	0	0	100.0
	17		73	26	0	0	0	2	0	0	100.0
	18		73	26	0	0	0	1	0	0	100.0
	19		73	26	0	0	0	1	0	0	100.0
	20		94	4	0	0	0	2	0	0	100.0
	21		95	4	0	0	0	1	0	0	100
	Average		85.4	9.3	0.4	0.1	0.0	4.6	0.0	0.1	100.1

Table A3.1.1(2) Specification of Cargo Handling Equipment in the Port of Colombo

CARGO HANDLING PLANT AS AT 17/08/95(1)

S/NO.	MAKE	MODEL	TYPE	CAPACY	NO.OF UNITS	YR OF PURCH
	AT JCT					
1	Velmat	TD 2512	Fork Lift Truck	15 T	1	1984
2	Mitsubishi	FD 280	Fork Lift Truck	28 T	1	1992
3	Fantuzzi	FDC 420 G	Top Lifter	35 T	2	1994
4	Fantuzzi	FDC 180 S6	Lift Truck	09 T	2	1994
5	Fantuzzi	FDC 180 S6	Lift Truck	09 T	1	1995
6	Caterpiller	V 900 CH	Front Loader Lift Truck	36 T	7	1994
7	T.C.M.	FD 23 Z1	Fork Lift Truck	2150 Kg	11	1985
8	T.C.M.	FD 25 Z3	Fork Lift Truck	2500 Kg	3	1992
9	T.C.M.	FD 60 Z7	Fork Lift Truck	6000 Kg	1	1988
10	Mitsubishi	FD 25	Fork Lift Truck	2500 Kg	1	1995
11	Johnston	Yard Sweeper	Yard Sweeper	*	1	1995
12	Hino	SH 273 K	Prime Mover	*	9	1985
13	Hino	SH 273 K	Prime Mover	*	28	1987
14	Ottawa	YT 50	Yard Tractor	*	12	1994
15	Capacity	Mafi(TJ5000)	Yard Tractor	*	12	1994
16	Tokyu	TCE 204	Trailer	20 Ft.	15	1985
17	Tokyu	TCE 404	Trailer	40 Ft.	38	1985
18	Saccom	SL 4092	Trailer	40 Ft.	4	1992
19	TSL	TSL 45-52 DA	Trailer	45 Ft.	24	1994
20	Mitsui Paceco	Portainer	Semi-Rope Trolly	*	*	*
*	*	*	Hinged Boom	35.5 MT	2	1985
21	Mitsui Paceco	Portainer	-do -	35.5 MT	2	1987
22	Mitsui Paceco	Portainer	-do -	35.5 MT	1	1994
23	Mitsui Paceco	Transtainer	Man-Trolly, U frame	*	*	*
*	*	*	Rubber tired	35.5 MT	4	1985
24	Mitsui Paceco	Transtainer	-do -	35.5 MT	2	1986
25	Mitsui Paceco	Transtainer	-do -	35.5 MT	4	1987
26	Mitsui Paceco	Transtainer	-do -	35.5 MT	2	1991
27	Mitsui Paceco	Transtainer	-do -	35.5 MT	3	1994
28	Mitsui Paceco	Portainer	Rope-Trolly	*	*	*
*	*	*	Hinged Boom	41 MT	2	1994
29	Mitsui Paceco	Transtainer	Man-Trolly, Frame	*	*	*
*	*	*	Rubber tired	41 MT	6	1994
30	Mitsui Paceco	Transtainer	-do -	41 MT	7	1995
	AT Q.E.Q.					
31	Mitsubishi	FD 150	Container handling FLT	15 T	1	1980
*	*	*	with Forks	*	*	*
32	Mitsubishi	FD 250	Container handling FLT	25 T	4	1980
*	*	*	02 Nos. with 20' fixed	*	*	*
*	*	*	spreader and 02 Nos.	*	*	*
*	*	*	with forks	*	*	*
33	Mitsubishi	FD 400	Container handling FLT	40 T	7	1988
*			with 40' Telescopic			
*			Spreader			

Source: Sri Lanka Port Authority

CARGO HANDLING PLANT AS AT 17/08/95(2)

S/NO.	MAKE	MODEL	TYPE	CAPACY	NO.OF UNITS	YR OF PURCH
34	Mitsubishi	FD 420	Container handling FLT	*	*	*
*	*	*	with 40' T/spreader	42 T	4	1992
35	Mitsubishi	FD 280	Container handling FLT	*	*	*
*	*	*	with 20' fixed spreader	28 T	1	1992
36	T.C.M.	FD 60 Z7	FLT	06 T	3	1988
37	Mitsubishi	FD 35	FLT 02 Units with paper	*	*	*
*	*	*	roll clamp	3.5 T	8	1992
38	T.C.M.	FD 25 Z2	FLT stuffing & Destuffing	2.5 T	13	1984
39	T.C.M.	FD 25 Z2	FLT	2.5 T	9	1985
40	Mitsubishi	FD 25	FLT	*	5	1987
41	Mitsubishi	FD 25	FLT 02 Nos. with paper	*	*	*
*	*	*	roll clamp	2.5 T	4	1988
42	T.C.M.	FD 25 Z2S	FLT	2.5 T	5	1989
43	T.C.M.	FD 25 Z2S	FLT, 01 No.with paper	*	*	*
*	*	*	roll clamp	2.5 T	5	1991
44	Komatsu	FD 25 J11	FLT	2.5 T	5	1992
45	T.C.M.	FD 25 Z3	FLT	2.5 T	5	1994
46	Ottawa	YT 30	Terminal Tractors	30T on	20	1992
*	*		*	5th wheel	*	*
47	Mafi-Zenith		40' Container Trailers	45 T	20	1992
	AT Q.V.Q.					
48	Seacom	10-40	Low Bed Trailers	10 T	10	1991
49	Massey	*	*		*	
*	Furguson	240	Farm Tractors		7	
	AT G.C.M.U.(QCI) AND CRANE REPAIR SHOP					
50	Liebherr	*	Gantry Crane	35.5 T	2	1983
51	Mitsui Paceco	*	Gantry Crane	35.5 T	1	1989
52	Portainer	*	Shore Crane	6.0 T	8	1944
53	IHI	*	Shore Crane	7.5 T	1	1993
54	Canadian	*	Shore Crane	6.0 T	4	1944
55	Rangoon	*	Shore Crane	3.0 T	1	1941
56	Giraffe/Jambo	*	Floating Crane	60.0 T	2	1944
57	Singlebarge	*	Floating Crane	4.0 T	1	1944
58	Priestman	*	Floating Crane	25.0 T	1	1962
59	Priestman	*	Floating Crane	6.0 T	3	*
60	Pickrover	R 80	Mobile Crane	7.25T	13	1979/80
61	Jones	11-7	Mobile Crane	12.0 T	2	1972
62	Jones	565	Mobile Crane	35.0 T	1	1971
63	Jones	565	Crawler Crane	35.0 T	1	1972
64	Krupp	10GMT	Mobile Crane	10.0 T	2	1978
65	Coles	80/88	Mobile Crane	80.0 T	1	1978
66	Coles	8130	Mobile Crane	130.0 T	1	1980
67	Coles Hydra	120T	Mobile Crane	12.0 T	1	1969
68	American	*	*		*	*
*	Hoist	*	Crawler Crane	30.0 T	1	1967
69	Kato	KR 250	Mobile Crane	25.0 T	3	1988
70	Kato	NK 250 E	Mobile Crane	25.0 T	1	1990

Source: Sri Lanka Port Authority

FIGURE A3.3.1 Distribution of Ship Sizes (Conventional)

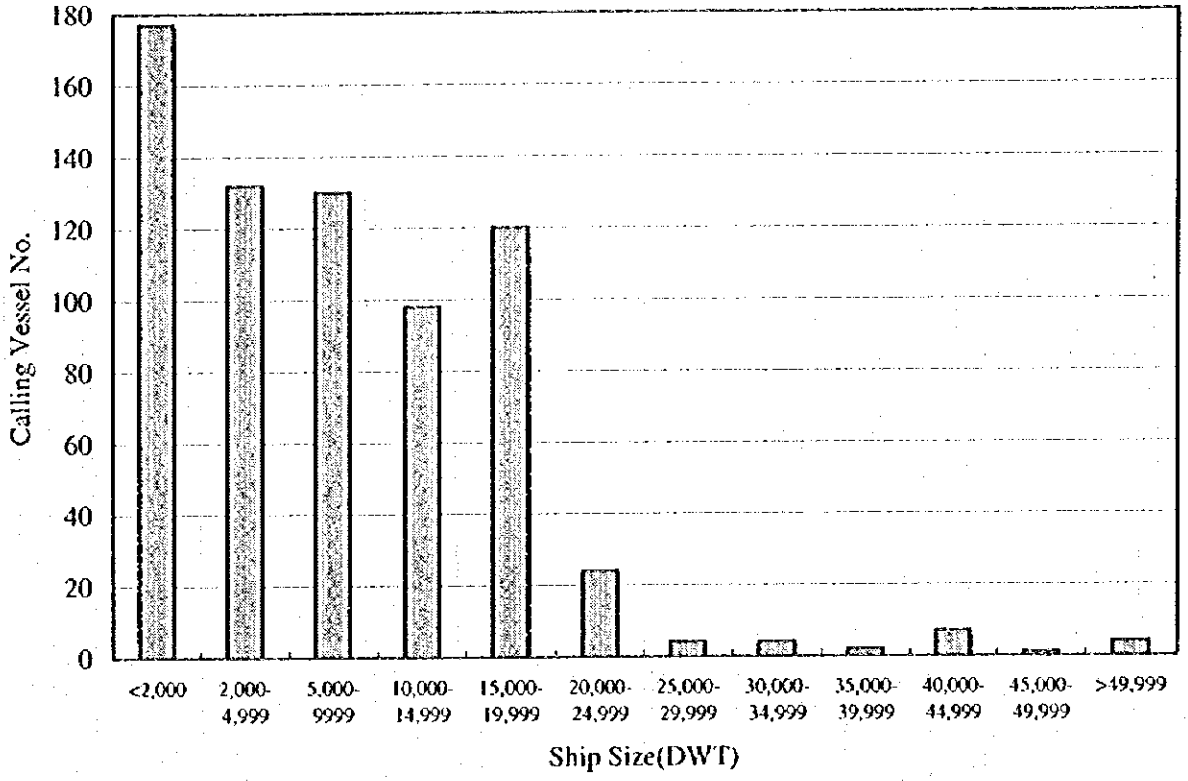


FIGURE A3.3.2 Distribution of Ship Sizes (Bulk)

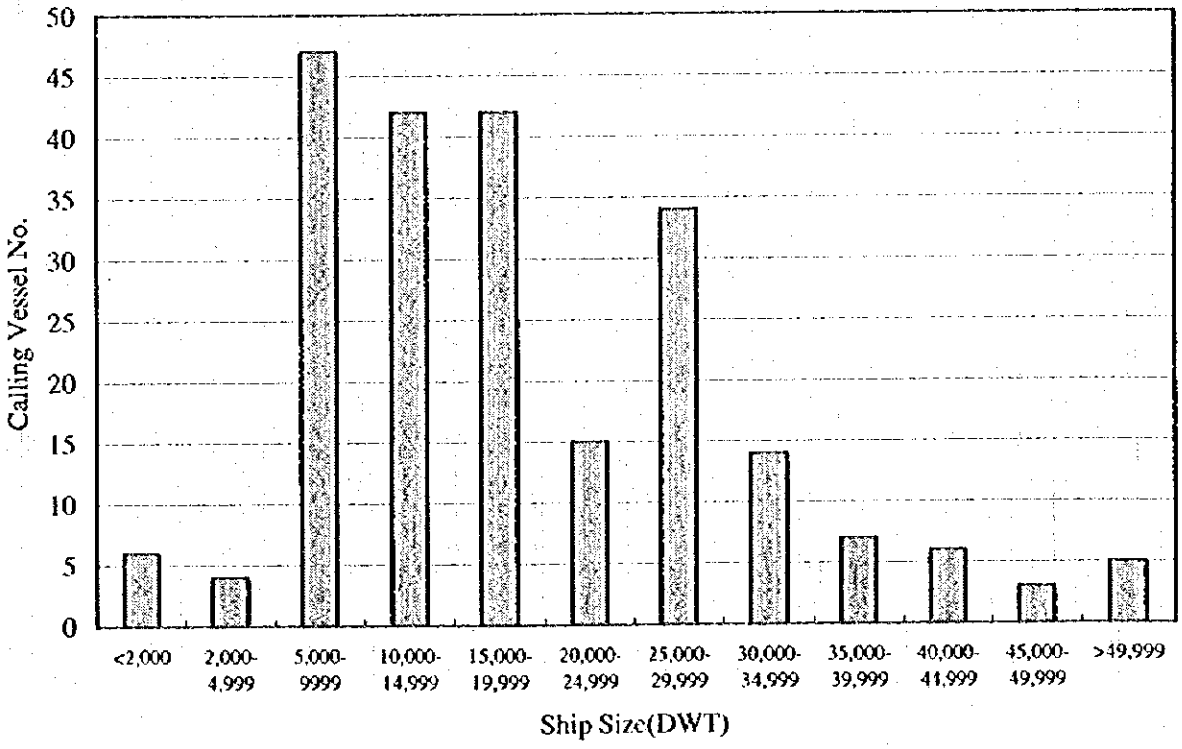


FIGURE A3.3.3 Distribution of Ship Sizes (Ro Ro)

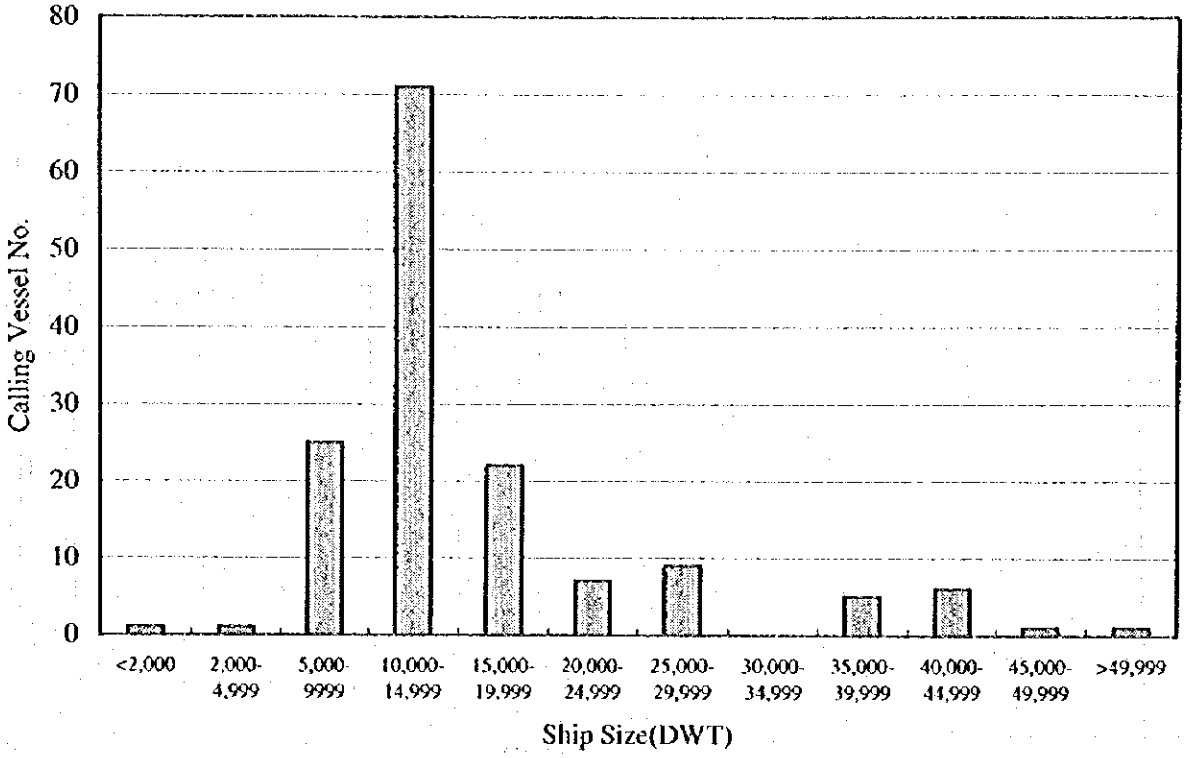


FIGURE A3.3.4 Distribution of Ship Sizes (Other)

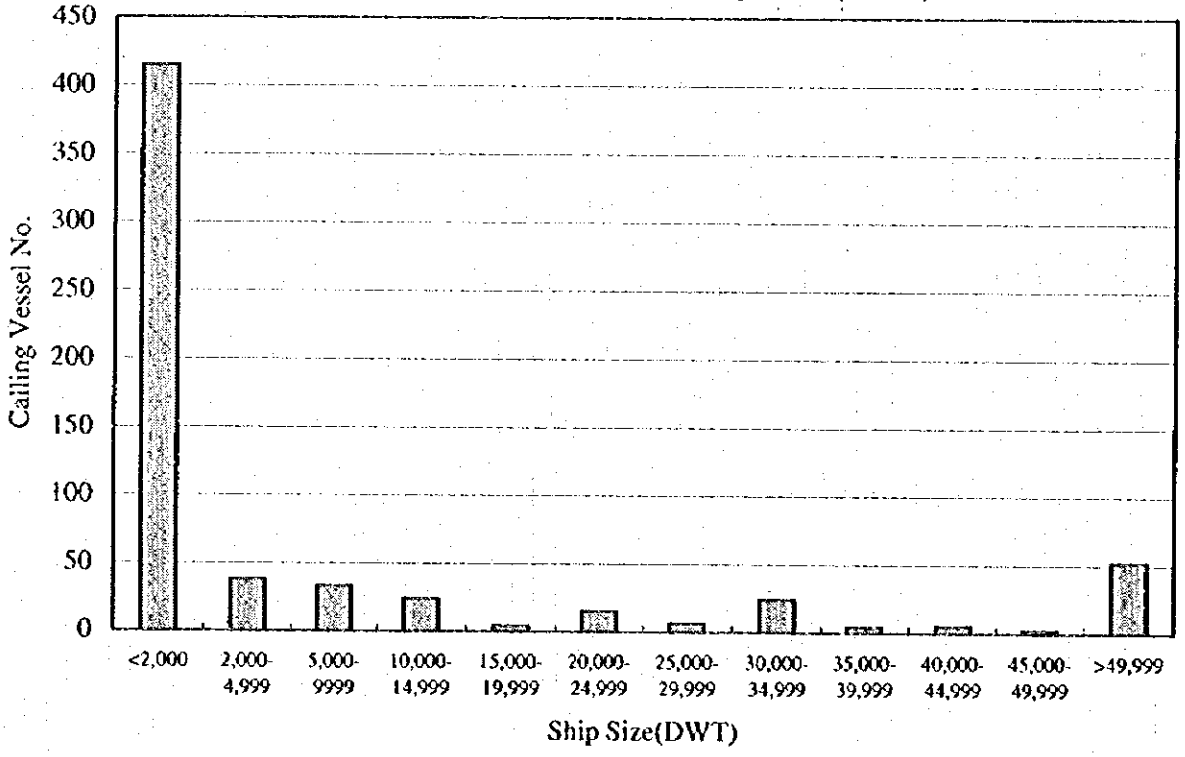


FIGURE A3.3.5 Distribution of Ship Draft (All Type)

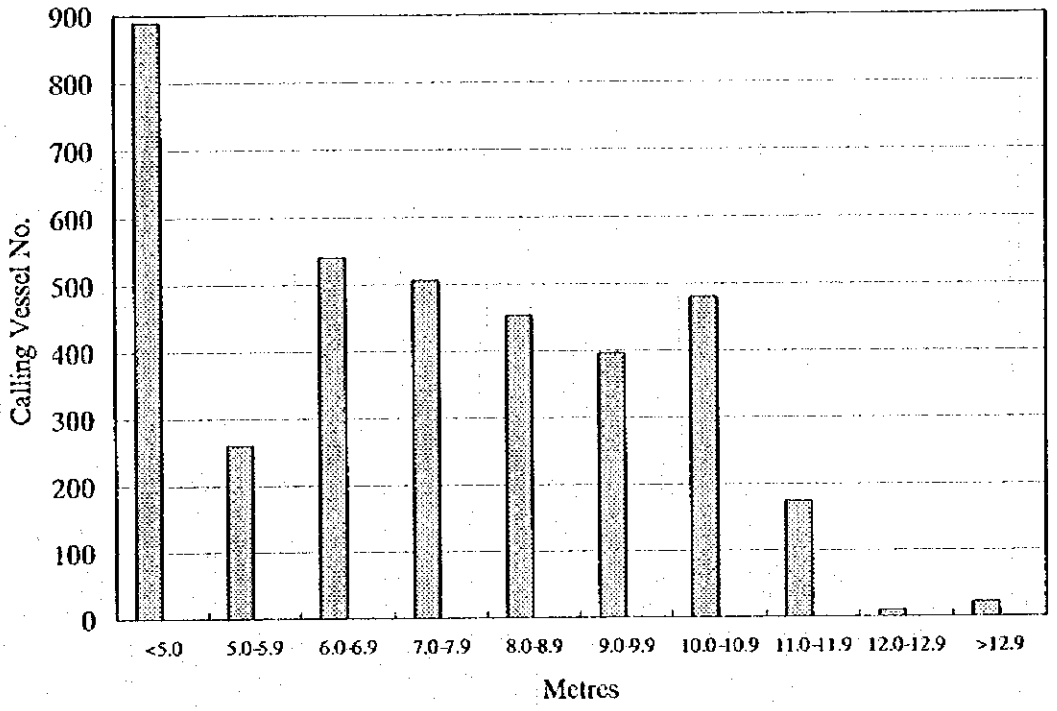


TABLE A3.4.1 Trends of Import Cargo by Main Commodity (Port of Colombo)

('000 tons)

Type of Cargo	Commodity	1986	1987	1988	1989	1990	1991	1992	1993	1994
Break Bulk (Bags)	Rice	239	105	198	324	198	127	228	199	84
	Flour	11	10	34	61	135	21	2		
	Prima Flour								30	5
	Sugar	333	378	358	409	287	388	372	415	488
	Chillies	2	2	13	7	4	8	6		
	Lentils								27	39
	Onions	51	34	32	22	30	44	35	28	25
	Cement	156	149	113	76	121	161	88	216	223
	Fertilizer	418	407	572	356	497	428	338	460	411
Break Bulk	Iron/Steel								182	203
	M/Vehicles								41	51
	Other Break Bulk	512	528	492	384	405	437	486	222	238
	Lash Barges Local	3	3	0						
	Subtotal	*1,726*	*1,615*	*1,811*	*1,639*	*1,677*	*1,613*	*1,555*	*1,820*	*1,767*
Dry Bulk	Cement	192	213	271	311	304	201	322	333	403
	Clinker								10	55
	Fertilizer								17	28
	Wheat		31	11	8	29	28		18	
	Gypsum								15	14
	Maize								78	83
	Other Dry Bulk	120	114	114	97	56	175	177	31	6
	Subtotal	*312*	*357*	*396*	*416*	*390*	*403*	*499*	*502*	*589*
Liquid Bulk	Crude Oil	1,701	1,779	1,649	1,158	1,717	1,637	1,304	1,800	1,914
	Fuel Oil (White Oil)	171	267	162	443	146	214	682	314	323
	LP Gas	1	2	5	15	17	18	31	38	51
	Palm Oil	10	20	27	17	23	28	32	47	30
	Tallow	7	3	4	6	5	6	4	6	8
	Coconut Oil								18	1
	Subtotal	*1,890*	*2,071*	*1,847*	*1,639*	*1,908*	*1,903*	*2,054*	*2,223*	*2,327*
Containerized Cargo		526	578	651	761	933	973	1,176	1,400	1,628
Total		*4,454*	*4,622*	*4,704*	*4,455*	*4,908*	*4,893*	*5,284*	*5,945*	*6,311*

Source: Port Statistics, Sri Lanka Ports Authority

Note: Exclusive of Restowing & Transfer of Cement in Bulk

TABLE A3.4.2 Trends of Export Cargo by Main Commodity (Port of Colombo)

('000 tons)

Type of Cargo	Commodity	1986	1987	1988	1989	1990	1991	1992	1993	1994
Break Bulk	Tea	201	157	155	136	145	170	106	40	47
	Rubber	55	54	54	41	44	21	13	6	4
	Coconut Products	130	77	53	89	75	26	7		4
	Wheat Bran								1	
	Other Break Bulk	108	90	61	40	90	87	37	59	108
	Subtotal	*494*	*378*	*322*	*306*	*353*	*303*	*162*	*106*	*163*
Liquid Bulk	Refined/Black Fuel oil Gas oil	104	41	133	54	98	98		67	105
	Chemical Neptha	131	113	101	63	75	99	77	118	97
	Bulk Coconut Oil	75	8		2	1				
	Other Liquid Bulk	2	3	5		1				
	Subtotal	*312*	*165*	*239*	*119*	*175*	*197*	*77*	*185*	*202*
Containerized Cargo		648	659	652	761	821	844	887	1,031	1,193
Total		*1,453*	*1,201*	*1,213*	*1,186*	*1,349*	*1,344*	*1,126*	*1,322*	*1,558*

Source: Port Statistics, Sri Lanka Ports Authority

Note: Exclusive of Restowing & Transfer of Cement in Bulk

TABLE A3.5.1 Total Laden and Empty Containers handled in the Port of Colombo (from 1981 to 1994)

(1) Discharging (TEUs)

Year	Total(TEUs) Laden	Total(TEUs) Empty		Total Percent Laden	Total Percent Empty
1981	18,246	12,671	30,917	59	41
1982	34,885	20,280	55,165	63	37
1983	56,201	18,233	74,434	76	24
1984	67,329	25,389	92,718	73	27
1985	82,937	29,196	112,133	74	26
1986	129,756	44,862	174,618	74	26
1987	171,345	47,467	218,812	78	22
1988	258,016	59,141	317,157	81	19
1989	219,349	54,273	273,622	80	20
1990	251,689	47,533	299,222	84	16
1991	265,109	70,782	335,891	79	21
1992	269,581	70,281	339,862	79	21
1993	352,400	79,975	432,375	82	18
1994	411,492	77,323	488,815	84	16

(2) Loading (TEUs)

Year	Total(TEUs) Laden	Total(TEUs) Empty		Total Percent Laden	Total Percent Empty
1981	26,085	2,469	28,554	91	9
1982	44,769	6,186	50,955	88	12
1983	57,434	14,722	72,156	80	20
1984	77,803	17,206	95,009	82	18
1985	82,937	29,196	112,133	74	26
1986	140,303	33,221	173,524	81	19
1987	182,579	34,227	216,806	84	16
1988	260,800	50,528	311,328	84	16
1989	226,846	51,342	278,188	82	18
1990	250,509	45,625	296,134	85	15
1991	266,012	67,585	333,597	80	20
1992	261,926	73,988	335,914	78	22
1993	339,139	86,884	426,023	80	20
1994	390,923	92,904	483,827	81	19

(3) Total Handling (TEUs)

Year	Total(TEUs) Laden	Total(TEUs) Empty		Total Percent Laden	Total Percent Empty
1981	44,331	15,140	59,471	75	25
1982	79,654	26,466	106,120	75	25
1983	113,735	32,955	146,690	78	22
1984	145,132	42,595	187,727	77	23
1985	165,874	58,392	224,266	74	26
1986	270,059	78,083	348,142	78	22
1987	353,924	81,694	435,618	81	19
1988	518,816	109,669	628,485	83	17
1989	446,195	105,615	551,810	81	19
1990	502,198	93,167	595,365	84	16
1991	531,121	138,367	669,488	79	21
1992	531,507	144,269	675,776	79	21
1993	691,539	166,859	858,398	81	19
1994	802,415	170,227	972,642	83	18

Source: Sri Lanka Port Authority, Statistics Section

TABLE A3.5.2 Number of Transhipped/Domestic Containers and Transhipment Ratio (from 1989 to 1994)

DISCHARGE (TEUs)

YEAR	DOMESTIC TOTAL	DOMESTIC %	TRANSHIPMENT TOTAL	TRANSHIPMENT %	RE-STOWING TOTAL	TOTAL
1981	26,354	85.2	3,734	12.1	829	30,917
1982	37,560	68.1	16,162	29.3	1,443	55,165
1983	38,741	52.0	33,709	45.3	1,984	74,434
1984	46,160	49.8	43,387	46.8	3,171	92,718
1985	52,742	47.0	57,194	51.0	2,197	112,133
1986	60,389	34.6	110,835	63.5	3,394	174,618
1987	65,174	29.8	150,446	68.8	3,192	218,812
1988	68,804	21.7	244,567	77.1	3,786	317,157
1989	78,401	28.7	191,396	69.9	3,825	273,622
1990	87,917	29.4	205,525	68.7	5,780	299,222
1991	95,197	28.3	234,791	69.9	5,903	335,891
1992	107,033	31.5	226,489	66.6	6,340	339,862
1993	127,405	29.5	297,051	68.7	7,919	432,375
1994	146,636	30.0	333,529	68.2	8,650	488,815

LOADING (TEUs)

YEAR	DOMESTIC TOTAL	DOMESTIC %	TRANSHIPMENT TOTAL	TRANSHIPMENT %	RE-STOWING TOTAL	TOTAL
1981	23,633	82.8	4,086	14.3	835	28,554
1982	33,423	65.6	16,099	31.6	1,433	50,955
1983	38,268	53.0	32,092	44.5	1,796	72,156
1984	47,219	49.7	44,718	47.1	3,072	90,009
1985	52,742	47.0	57,194	51.0	2,197	112,133
1986	60561	34.9	109,621	63.2	3,342	173,524
1987	63,902	29.5	149,776	69.1	3,128	216,806
1988	66,635	21.4	240,934	77.4	3,759	311,328
1989	80,579	29.0	193,821	69.7	3,788	278,188
1990	85,122	28.7	205,247	69.3	5,765	296,134
1991	92,986	27.9	234,728	70.4	5,883	333,597
1992	104,898	31.2	224,724	66.9	6,292	335,914
1993	124,494	29.2	293,603	68.9	7,926	426,023
1994	142,839	29.5	332,311	68.7	8,677	483,827

TOTAL HANDLING (TEUs)

YEAR	DOMESTIC TOTAL	DOMESTIC %	TRANSHIPMENT TOTAL	TRANSHIPMENT %	RE-STOWING TOTAL	TOTAL
1981	49,987	84.1	7,820	13.1	1,664	59,471
1982	70,983	66.9	32,261	30.4	2,876	106,120
1983	77,109	52.6	65,801	44.9	3,780	146,690
1984	93,379	49.7	88,105	46.9	6,243	187,727
1985	105,484	47.0	114,388	51.0	4,394	224,266
1986	120,950	34.7	220,456	63.3	6,736	348,142
1987	129,076	29.6	300,222	68.9	6,320	435,618
1988	135,439	21.6	485,501	77.2	7,545	628,485
1989	158,980	28.8	385,217	69.8	7,613	551,810
1990	173,048	29.1	410,772	69.0	11,545	595,365
1991	188,183	28.1	469,519	70.1	11,786	669,488
1992	211,931	31.4	451,213	66.8	12,632	675,776
1993	251,899	29.3	590,654	68.8	15,845	858,398
1994	289,475	29.8	665,840	68.5	17,327	972,642

Source: Sri Lanka Port Authority, Statistics Section

Table A3.6.1 Container Handling Productivity(Net Productivity)

(JCT)

Container Handling Productivity		Main Vessel			Feeder Vessel			Total		
		f	%	Sum	f	%	Sum	f	%	Sum
(Box/Hr)	(Rep.)									
6-8	7	0	0.0	0	10	7.8	70	10	2.2	70
8-10	9	3	0.9	27	13	10.1	117	16	3.6	144
10-12	11	22	6.9	242	26	20.2	286	48	10.7	528
12-14	13	48	15.1	624	17	13.2	221	65	14.5	845
14-16	15	47	14.8	705	27	20.9	405	74	16.6	1110
16-18	17	73	23.0	1241	15	11.6	255	88	19.7	1496
18-20	19	49	15.4	931	10	7.8	190	59	13.2	1121
20-22	21	36	11.3	756	6	4.7	126	42	9.4	882
22-24	23	13	4.1	299	2	1.6	46	15	3.4	345
24-26	25	15	4.7	375	2	1.6	50	17	3.8	425
26-28	27	6	1.9	162	0	0.0	0	6	1.3	162
28-30	29	4	1.3	116	0	0.0	0	4	0.9	116
30-32	35	2	0.6	70	1	0.8	35	3	0.7	105
Total(Box/Hr)		318	100	5548	129	100.0	1801	447	100.0	7349
Average(Box/Hr)				17.7			14.1			16.7

(QCT)

Container Handling Productivity		Main Vessel			Feeder Vessel			Total		
		f	%	Sum	f	%	Sum	f	%	Sum
(Box/Hr)	(Rep.)									
6-8	7	1	0.8	7	1	1.8	7	2	1.1	14
8-10	9	6	5.0	54	2	3.6	18	8	4.6	72
10-12	11	7	5.9	77	11	19.6	121	18	10.3	198
12-14	13	28	23.5	364	16	28.6	208	44	25.1	572
14-16	15	38	31.9	570	11	19.6	165	49	28.0	735
16-18	17	17	14.3	289	5	8.9	85	22	12.6	374
18-20	19	12	10.1	228	6	10.7	114	18	10.3	342
20-22	21	8	6.7	168	1	1.8	21	9	5.1	189
22-24	23	1	0.8	23	3	5.4	69	4	2.3	92
24-26	25	0	0.0	0	0	0.0	0	0	0.0	0
26-28	27	0	0.0	0	0	0.0	0	0	0.0	0
28-30	29	0	0.0	0	0	0.0	0	0	0.0	0
30-32	31	1	0.8	31	0	0.0	0	1	0.6	31
Total(Box/Hr)		119	100.0	1811	56	100.0	808	175	100.0	2619
Average(Box/Hr)				15.21849			14.42857			15.0

Source: Sri Lanka Ports Authority

Table A3.6.2 Container Dwelling Time in JCT(from 1995 May to July)

DWELLING DAYS		IMPORT	% (%)	CUM	EXPORT	% (%)	CUM	TRANS-SHIP	% (%)	CUM	TOTAL	% (%)	CUM
0 to 1	0.5	0	0	0	0	0	0	0	0	0	0	0	0
1 to 2	1.5	534	4	6	110	1	2	718	3	5	1,362	2	3
2 to 3	2.5	1,573	11	28	1,672	11	28	2,283	8	20	5,528	10	25
3 to 4	3.5	1,904	13	46	4,485	31	109	2,896	10	35	9,285	16	56
4 to 5	4.5	1,670	11	50	3,365	23	104	3,021	11	50	8,057	14	63
5 to 6	5.5	1,472	10	55	1,931	13	72	3,546	12	66	6,949	12	66
6 to 7	6.5	944	6	39	1,063	7	46	3,068	11	72	5,075	9	59
7 to 8	7.5	773	5	38	649	4	30	2,734	10	75	4,156	7	53
8 to 9	8.5	700	5	43	528	4	34	2,086	7	60	3,314	6	51
9 to 10	9.5	711	5	48	323	2	19	2,029	7	67	3,063	5	48
10 to 11	10.5	675	5	53	184	1	11	1,151	4	42	2,010	3	32
11 to 12	11.5	606	4	46	93	1	12	998	4	46	1,697	3	35
12 to 13	12.5	464	3	38	91	1	13	651	2	25	1,206	2	25
13 to 14	13.5	391	3	41	52	0	0	583	2	27	1,026	2	27
14 to 15	14.5	261	2	29	36	0	0	599	2	29	896	2	29
15 to 16	15.5	217	1	16	22	0	0	482	2	31	721	1	16
16 to 17	16.5	208	1	17	5	0	0	307	1	17	520	1	17
17 to 18	17.5	222	1	18	4	0	0	172	1	18	398	1	18
18 to 19	18.5	144	1	19	1	0	0	268	1	19	413	1	19
19 to 20	19.5	167	1	20	7	0	0	149	1	20	323	1	20
20 to 21	20.5	98	1	21	2	0	0	97	0	0	197	0	0
21 to 22	21.5	91	1	22	3	0	0	153	1	22	247	0	0
22 to 23	22.5	63	0	0	1	0	0	129	0	0	193	0	0
23 to 24	23.5	68	0	0	2	0	0	102	0	0	172	0	0
24 to 25	24.5	63	0	0	0	0	0	92	0	0	155	0	0
25 to 26	25.5	72	0	0	0	0	0	17	0	0	89	0	0
26 to 27	26.5	68	0	0	0	0	0	8	0	0	76	0	0
27 to 28	27.5	37	0	0	0	0	0	28	0	0	65	0	0
28 to 29	28.5	51	0	0	1	0	0	8	0	0	60	0	0
29 to 30	29.5	44	0	0	0	0	0	15	0	0	59	0	0
More than	35.0	534	4	140	4	0	0	77	0	0	615	1	35
TOTAL		14825	98	825	14634	99	476	28467	100	741	57927	99	692
AVERAGE			8.42			4.80			7.41			6.99	

TABLE A3.6.3 Change of the Number of SLPA Employees by division

Unit: persons

Year	1990	1991	1992	1993	1994
The Port of Colombo					
Operations Division	7,545	6,509	6,344	6,216	5,894
Increasing Rate	100.0%	86.3%	84.1%	82.4%	78.1%
Tally Section	401	392	328	328	322
Increasing Rate	100.0%	97.8%	81.8%	81.8%	80.3%
Engineering Division	4,882	4,314	4,216	4,182	4,001
Increasing Rate	100.0%	88.4%	86.4%	85.7%	82.0%
Supplies Division	0	221	215	227	208
Increasing Rate	–	100.0%	97.3%	102.7%	94.1%
Harbour Master's Division	1,219	1,144	1,148	1,147	1,217
Increasing Rate	100.0%	93.8%	94.2%	94.1%	99.8%
Security Division	1,553	1,457	1,451	1,426	1,387
Increasing Rate	100.0%	93.8%	93.4%	91.8%	89.3%
Finance Division	665	666	649	638	618
Increasing Rate	100.0%	100.2%	97.6%	95.9%	92.9%
Commercial Division	420	448	427	437	423
Increasing Rate	100.0%	106.7%	101.7%	104.0%	100.7%
Personnel Division	444	422	417	422	410
Increasing Rate	100.0%	95.0%	93.9%	95.0%	92.3%
Internal Audit Division	91	89	85	83	79
Increasing Rate	100.0%	97.8%	93.4%	91.2%	86.8%
Medical Division	62	69	68	61	67
Increasing Rate	100.0%	111.3%	109.7%	98.4%	108.1%
Planning Research & Development Division	335	251	213	209	242
Increasing Rate	100.0%	74.9%	63.6%	62.4%	72.2%
Training Institute	117	115	110	111	105
Increasing Rate	100.0%	98.3%	94.0%	94.9%	89.7%
Secretariat / Administrative	113	133	129	122	125
Increasing Rate	100.0%	117.7%	114.2%	108.0%	110.6%
Legal Division	13	13	13	15	11
Increasing Rate	100.0%	100.0%	100.0%	115.4%	84.6%
The Port of Colombo Total	17,860	16,243	15,813	15,624	15,109
Increasing Rate	100.0%	90.9%	88.5%	87.5%	84.6%
The Port of Galle Total	796	690	644	596	564
Increasing Rate	100.0%	86.7%	80.9%	74.9%	70.9%
The Port of Trincomalee Total	1,162	1,113	1,030	1,034	944
Increasing Rate	100.0%	95.8%	88.6%	89.0%	81.2%
Grand Total	19,818	18,046	17,487	17,254	16,617
Increasing Rate	100.0%	91.1%	88.2%	87.1%	83.8%

TABLE A3.6.4 Personnel Arrangement at QCT (6th Feb, 1996)

Location	Unit/shift	1st shift	2nd shift	Total
Gate Checker	4/gate	4	4	8
Wharf (Yard)		20	20	40
Assistant Superintenden	2/yard block	2	2	4
Supervisor	3/yard block	3	3	6
Yard Assistant	5 - 7/stacking point	15	15	30
On - board		14	14	28
Assistant Superintenden	1/ship	2	2	4
Plan Clerk	2/ship gear	4	4	8
Signal Man	2/ship gear	4	4	8
Tally Clerk	2/ship gear	4	4	8
Quayside Crane	2 operators & 1 signal man/crane	9	9	18
Forklift	2 operators/forklift	24	24	48
Prime Mover	1 operator & 1 cleaner/prime mover	60	60	120
CFS		38	38	76
Assistant Superintenden	2/CFS	2	2	4
Supervisor	2/CFS	2	2	4
Foreman	4/CFS	4	4	8
Labour	30/CFS	30	30	60
Total		169	169	338

TABLE A3.6.5 The number of employees in QCT

	Enployees' NO	Shift
Operation Division Total	450	-
1. Excutive officer	10	1shift
2. Assit. unit superintendent	20	2shift
3. Supervising officer	16	2shift
4. Supervising operator	14	2shift
5. Tally clerk	30	2shift
6. Office clerk	36	1shift
7. Typist	2	1shift
8. Stenographer	1	1shift
9. Plan clerk	18	2shift
10. Export clerk	14	2shift
11. Gantry operator	16	2shift
12. Driver (Tractor)	113	2shift
13. Cleaner	54	2shift
14. Computer operator	11	2shift
15. Yard assistant	42	2shift
16. Health worker	8	1shift
17. Gantry signal man	21	2shift
18. Store man	1	2shift
19. Messenger	23	2shift
Commercial Division Total	28	-
20. Store keeper	2	2shift
21. Warehouse Clerk	10	2shift
22. Landing & Delively Check	16	2shift
Grand Total	478	

TABLE A3.6.6 Personnel Arrangement at QEQ (6th Feb, 1996)

Location	Unit/shift (Discharging operation)		Unit/shift (Loading operation)
	Bagged	Iron/Steel,Paper	
On - board	18 - 20	18 - 20	25 - 27
Fore Man	1 - 2	1 - 2	1 - 2
Tindel	1	1	1
Winchman	4 -5	4 -5	4 -5
Labour	12	12	19
Wharf (Yard)	13	9	0
Gang Leader	1	1	0
Labour	10	8	0
Sweeper	2	0	0

TABLE A3.6.7 The number of employees in QEW

	Enployees' NO (2shift)	
	Current NO (6th Feb 96')	Required NO
On - board	337	426
Fore Man	4	8
Tindel	14	20
Winchman	84	100
Labour	184	250
Tally Clerk	51	48
Wharf	807	773
Gang Leader	36	28
Labour	738	706
Assistant Superintendent	12	14
Supervisor	21	25
Excutive officer	4	5
Administration clerk/Welfare	21	21
Typist	2	2
Minor Employee	23	23
Sipervising officer	12	10
Equipment store (LAB)	13	14
Checker (Delivery staff)	19	19
Store keeper	6	6
Warehouse clerk	25	25
Total	1269	1324

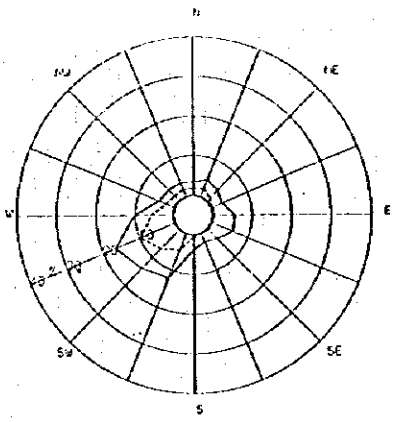
LEGEND
——— ALL WIND
- - - - - > 5m/s
——— > 10m/s

FIGURE A.4.1.1 (1) Wind Roses

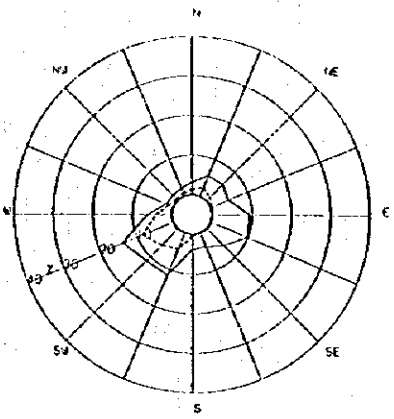
STATION:COLOMBO
PERIOD:04/1979–11/1984

All Year Round

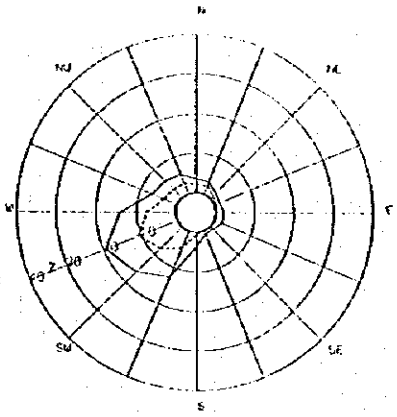
All Day



Morning(0000–0900hr)

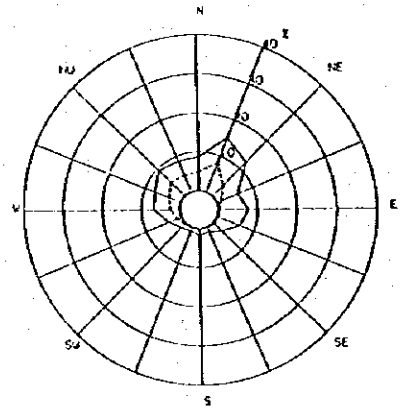


Afternoon(1200–2100hr)

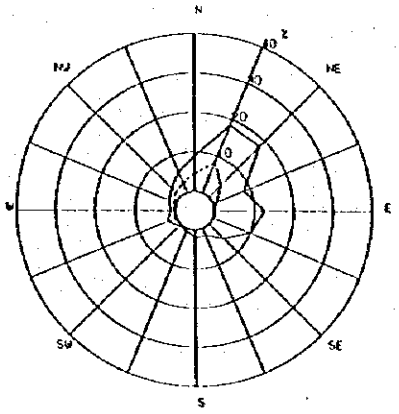


NE Monsoon(DEC–FEB)

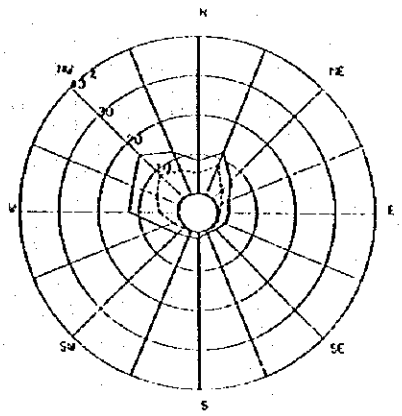
All Day



Morning

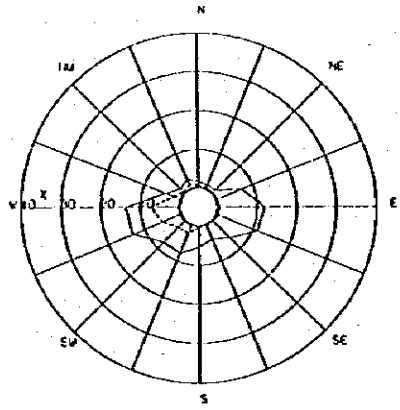


Afternoon

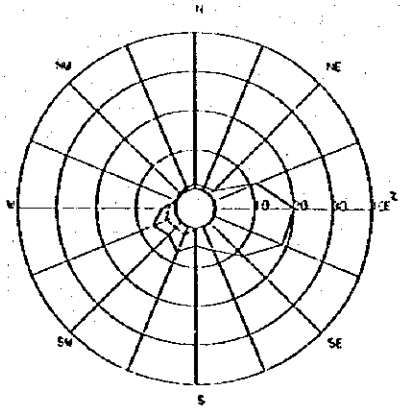


Intermonsoon(MAR–APR)

All Day



Morning



Afternoon

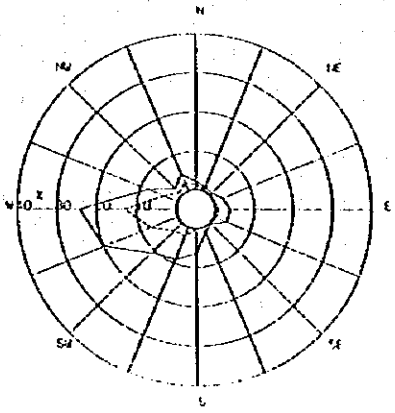
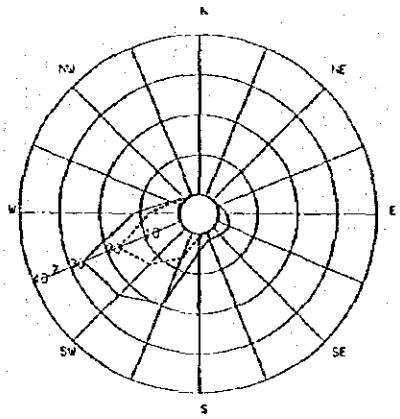


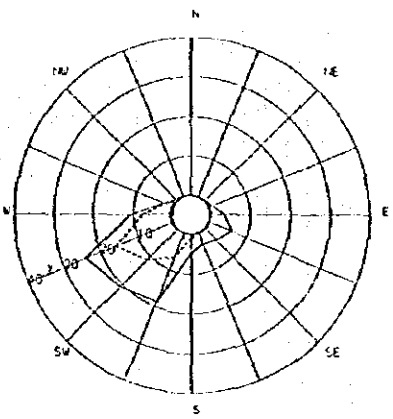
FIGURE A.4.1.1 (2) Wind Roses

SW Monsoon(MAY–SEP)

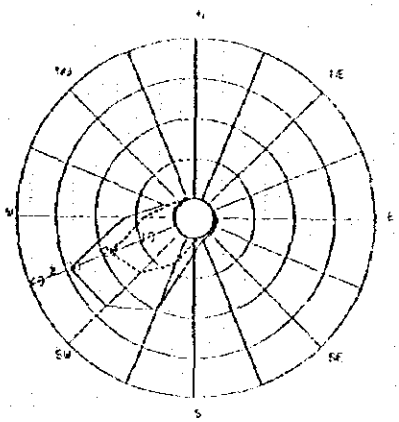
All Day



Morning(0000–0900hr)

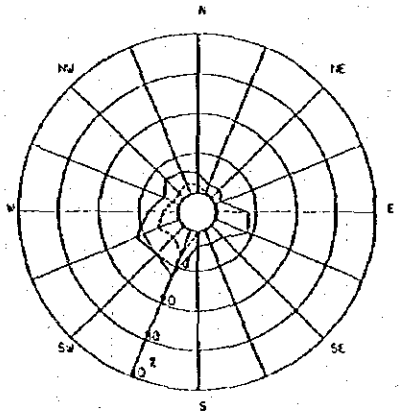


Afternoon(1200–2100hr)

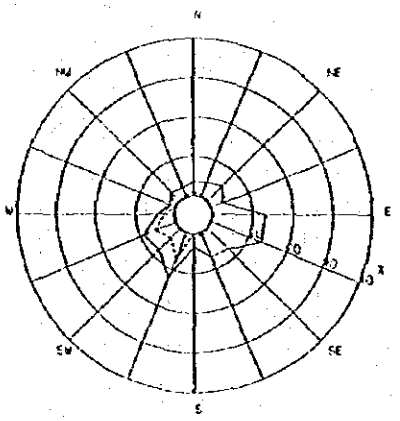


Intermonsoon(OCT–NOV)

All Day



Morning



Afternoon

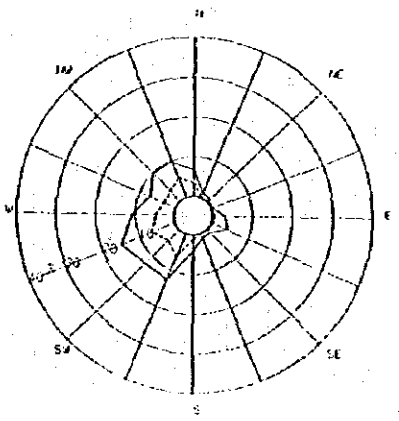


TABLE A.4.1.1 (1) Frequency Distribution of Winds by Direction

All Year Ronud

	Direction / Wind Speed(m/s)	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N	TOTAL
All Day	0.00-4.99	149	189	179	371	392	218	146	213	509	472	478	293	130	140	119	107	4105(60.7)
	5.00-9.99	152	70	22	13	11	7	7	36	299	457	635	373	150	115	128	113	2588(38.3)
	10.00-14.99						1			5	8	13	16	18	7	1	1	70(1.0)
	15.00-19.99											1						1(0.0)
	20.00-																	0(0.0)
	TOTAL	301	259	201	384	403	226	153	249	813	937	1127	682	298	262	248	221	6764
		(4.5)	(3.8)	(3.0)	(5.7)	(6.0)	(3.3)	(2.3)	(3.7)	(12.0)	(13.9)	(16.7)	(10.1)	(4.4)	(3.9)	(3.7)	(3.3)	(100.0)
Morning	0.00-4.99	189	153	146	313	330	195	118	108	241	185	178	71	22	36	40	59	2304(68.6)
	5.00-9.99	76	39	10	3	3	3	6	16	143	195	281	128	35	17	27	43	1025(30.5)
	10.00-14.99									1	4	5	9	5	1	1	1	27(0.8)
	15.00-19.99											1						1(0.0)
	20.00-																	0(0.0)
	TOTAL	185	192	156	316	333	198	124	124	385	384	455	208	62	54	68	103	3357
		(5.5)	(5.7)	(4.6)	(9.4)	(9.9)	(5.9)	(3.7)	(3.7)	(11.5)	(11.4)	(13.9)	(6.2)	(1.8)	(1.6)	(2.0)	(3.1)	(100.0)
Afternoon	0.00-4.99	40	36	33	58	62	23	28	105	268	287	300	222	108	104	79	48	1801(52.9)
	5.00-9.99	76	31	12	10	8	4	1	20	156	262	354	245	115	98	101	70	1563(45.9)
	10.00-14.99						1			4	4	8	7	13	6			43(1.3)
	15.00-19.99																	0(0.0)
	20.00-																	0(0.0)
	TOTAL	116	67	45	68	70	28	29	125	428	553	662	474	236	208	180	118	3407
		(3.4)	(2.0)	(1.3)	(2.0)	(2.1)	(0.8)	(0.9)	(3.7)	(12.6)	(16.2)	(19.4)	(13.9)	(6.9)	(5.3)	(5.3)	(3.5)	(100.0)

NE Monsoon

	Direction / Wind Speed(m/s)	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N	TOTAL
All Day	0.00-4.99	123	153	84	133	108	50	23	27	18	23	45	77	69	76	72	68	1149(64.2)
	5.00-9.99	146	68	20	3	3	3		3	3	6	19	41	58	86	83	86	628(35.1)
	10.00-14.99												2	4	6		1	13(0.7)
	15.00-19.99																	0(0.0)
	20.00-																	0(0.0)
	TOTAL	269	221	104	136	111	53	23	30	21	29	64	120	131	168	155	155	1790
		(15.0)	(12.4)	(5.8)	(7.6)	(6.2)	(3.0)	(1.3)	(1.7)	(1.2)	(1.6)	(3.6)	(6.7)	(7.3)	(9.4)	(8.7)	(8.7)	(100.0)
Morning	0.00-4.99	91	123	66	111	90	43	17	15	6	5	18	9	12	12	26	39	683(76.8)
	5.00-9.99	73	38	8			1		1			2		5	14	23	39	204(22.9)
	10.00-14.99														1		1	2(0.2)
	15.00-19.99																	0(0.0)
	20.00-																	0(0.0)
	TOTAL	164	161	74	111	90	44	17	16	6	5	20	9	17	27	49	79	889
		(18.4)	(18.1)	(8.3)	(12.5)	(10.1)	(4.9)	(1.9)	(1.8)	(0.7)	(0.6)	(2.2)	(1.0)	(1.9)	(3.0)	(5.5)	(8.9)	(100.0)
Afternoon	0.00-4.99	32	30	18	22	36	7	6	12	12	18	27	68	57	64	46	29	466(51.7)
	5.00-9.99	73	30	12	3	3	2		2	3	6	17	41	53	72	60	47	424(47.1)
	10.00-14.99												2	4	5			11(1.2)
	15.00-19.99																	0(0.0)
	20.00-																	0(0.0)
	TOTAL	105	60	30	25	39	9	6	14	15	24	44	111	114	141	106	76	901
		(11.7)	(6.7)	(3.3)	(2.8)	(4.3)	(1.0)	(0.7)	(1.6)	(1.7)	(2.7)	(4.9)	(12.3)	(12.7)	(15.6)	(11.8)	(8.4)	(100.0)

Intermonsoon (Mar.-Apr.)

	Direction / Wind Speed(m/s)	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N	TOTAL
All Day	0.00-4.99	6	10	65	108	103	58	37	49	54	51	78	61	21	10	14	10	735(77.5)
	5.00-9.99	3		1	5	3			3	21	22	48	69	17	4	11	6	213(22.5)
	10.00-14.99																	0(0.0)
	15.00-19.99																	0(0.0)
	20.00-																	0(0.0)
	TOTAL	9	10	66	113	106	58	37	52	75	73	126	130	38	14	25	16	948
		(1.0)	(1.1)	(7.0)	(11.9)	(11.2)	(6.1)	(3.9)	(5.5)	(7.9)	(7.7)	(13.3)	(13.7)	(4.0)	(1.5)	(2.6)	(1.7)	(100.0)
Morning	0.00-4.99	3	7	54	94	88	57	31	19	23	12	18	7	1	3	3	6	426(90.3)
	5.00-9.99	1		1	1	1			2	10	9	13	8					45(9.7)
	10.00-14.99																	0(0.0)
	15.00-19.99																	0(0.0)
	20.00-																	0(0.0)
	TOTAL	4	7	55	95	89	57	31	21	33	21	31	15	1	3	3	6	472
		(0.8)	(1.5)	(11.7)	(20.1)	(18.9)	(12.1)	(6.6)	(4.4)	(7.0)	(4.4)	(6.6)	(3.2)	(0.2)	(0.6)	(0.6)	(1.3)	(100.0)
Afternoon	0.00-4.99	3	3	11	14	15	1	6	30	31	39	60	54	20	7	11	4	309(64.9)
	5.00-9.99	2			4	2			1	11	13	35	61	17	4	11	6	167(35.1)
	10.00-14.99																	0(0.0)
	15.00-19.99																	0(0.0)
	20.00-																	0(0.0)
	TOTAL	5	3	11	18	17	1	6	31	42	52	95	115	37	11	22	10	476
		(1.1)	(0.6)	(2.3)	(3.8)	(3.6)	(0.2)	(1.3)	(6.5)	(8.8)	(10.9)	(20.0)	(24.2)	(7.8)	(2.3)	(4.6)	(2.1)	(100.0)

TABLE A.4.1.1 (2) Frequency Distribution of Winds by Direction

SW Monsoon

	Direction / Wind Speed(m/s)	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N	TOTAL
All Day	0.00-4.99	1		16	63	105	75	56	110	385	342	303	121	17	13	5	3	1615(51.4)
	5.00-9.99			1	1	3	2	3	25	218	396	515	231	60	8	8	2	1473(46.9)
	10.00-14.99						1			5	7	12	14	14	1	1		55(1.8)
	15.00-19.99											1						1(0.0)
	20.00-																	0(0.0)
	TOTAL	1	0	17	64	108	78	59	135	608	745	831	366	91	22	14	5	3144
		(0.0)	(0.0)	(0.5)	(2.0)	(3.4)	(2.5)	(1.9)	(4.3)	(19.3)	(23.7)	(26.4)	(11.6)	(2.9)	(0.7)	(0.5)	(0.2)	(100.0)
Morning	0.00-4.99			13	52	94	64	45	60	190	149	128	48	4	8	2	3	860(55.0)
	5.00-9.99			1	1	2	1	2	13	103	171	241	157	29	2	2		677(43.3)
	10.00-14.99									1	4	5	9	5		1		25(1.6)
	15.00-19.99											1						1(0.0)
	20.00-																	0(0.0)
	TOTAL	0	0	14	53	96	65	47	73	294	324	375	214	38	10	5	3	1563
		(0.0)	(0.0)	(0.9)	(3.4)	(6.1)	(4.2)	(3.0)	(4.7)	(18.8)	(20.7)	(24.0)	(13.7)	(2.4)	(0.6)	(0.3)	(0.2)	(100.0)
Afternoon	0.00-4.99	1		3	11	11	11	11	50	195	193	175	73	13	5	3	0	755(47.8)
	5.00-9.99					1	1	1	12	115	225	274	122	31	6	6	2	796(50.3)
	10.00-14.99						1			4	3	7	5	9	1			30(1.9)
	15.00-19.99																	0(0.0)
	20.00-																	0(0.0)
	TOTAL	1	0	3	11	12	13	12	53	314	421	456	200	53	12	9	2	1581
		(0.0)	(0.0)	(0.2)	(0.7)	(0.8)	(0.8)	(0.8)	(4.0)	(19.9)	(26.6)	(28.8)	(12.7)	(3.4)	(0.8)	(0.6)	(0.1)	(100.0)

Intermonsoon (Oct.-Nov.)

	Direction / Wind Speed(m/s)	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N	TOTAL
All Day	0.00-4.99	19	26	14	67	76	35	30	27	52	56	52	34	23	41	28	26	606(68.7)
	5.00-9.99	3	2		4	2	2	4	5	57	33	53	32	15	17	26	19	274(31.1)
	10.00-14.99										1	1						2(0.2)
	15.00-19.99																	0(0.0)
	20.00-																	0(0.0)
	TOTAL	22	28	14	71	78	37	34	32	109	90	106	66	38	58	54	45	882
		(2.5)	(3.2)	(1.6)	(8.1)	(8.8)	(4.2)	(3.9)	(3.6)	(12.4)	(10.2)	(12.0)	(7.5)	(4.3)	(6.1)	(6.1)	(5.1)	(100.0)
Morning	0.00-4.99	15	23	13	56	58	31	25	14	22	19	14	7	5	13	9	11	335(77.4)
	5.00-9.99	2	1		1		1	4		30	15	25	11	1	1	2	4	98(22.6)
	10.00-14.99																	0(0.0)
	15.00-19.99																	0(0.0)
	20.00-																	0(0.0)
	TOTAL	17	24	13	57	58	32	29	14	52	34	39	18	6	14	11	15	443
		(3.9)	(5.5)	(3.0)	(13.2)	(13.4)	(7.4)	(6.7)	(3.2)	(12.0)	(7.9)	(9.0)	(4.2)	(1.4)	(3.2)	(2.5)	(3.5)	(100.0)
Afternoon	0.00-4.99	4	3	1	11	18	4	5	13	30	37	38	27	18	28	19	15	271(60.4)
	5.00-9.99	1	1		3	2	1		5	27	18	28	21	14	16	24	15	176(39.2)
	10.00-14.99										1	1						2(0.4)
	15.00-19.99																	0(0.0)
	20.00-																	0(0.0)
	TOTAL	5	4	1	14	20	5	5	18	57	56	67	48	32	44	43	30	449
		(1.1)	(0.9)	(0.2)	(3.1)	(4.5)	(1.1)	(1.1)	(4.0)	(12.7)	(12.5)	(14.9)	(10.7)	(7.1)	(9.8)	(9.6)	(6.7)	(100.0)

FIGURE A.4.2.1 Previous Wave Obervation Period

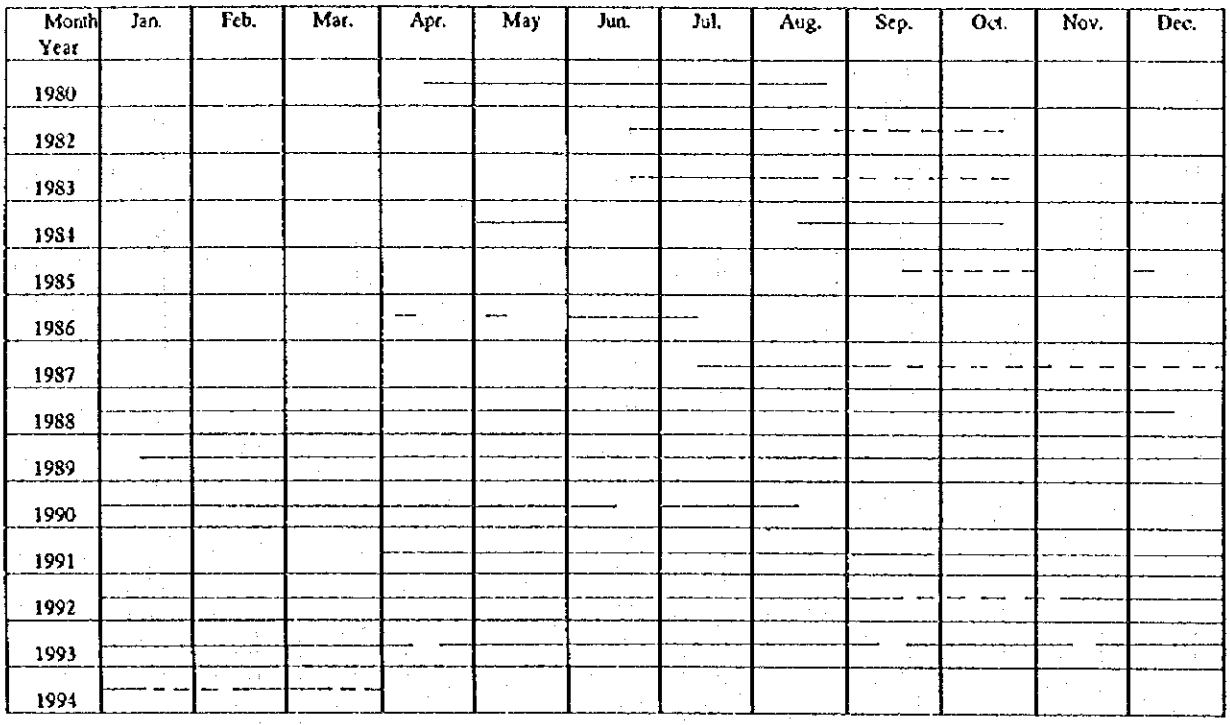


TABLE A.4.2.1 Scatter Diagram (All Year)

All Year 1980-1994

Period / Height	2-3sec	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13
0.0-0.2m		1									
0.2-0.4	2	41	82	36	12	1		1	2		
0.4-0.6	1	392	914	565	262	48	13	9	2	1	1
0.6-0.8		402	1253	628	298	148	60	8	3	1	
0.8-1.0		110	841	424	200	87	44	21	7		3
1.0-1.2		14	563	727	129	27	17	7	6	1	
1.2-1.4		1	363	1111	262	54	25	5	1		
1.4-1.6			82	901	275	36	7	3			
1.6-1.8			23	604	284	72	23	7	3		
1.8-2.0			5	252	159	36	12				
2.0-2.2				91	94	11	4	2			
2.2-2.4				28	47	2		2			
2.4-2.6				11	36						
2.6-2.8				1	19	3					
2.8-3.0					9	1					
3.0-3.2					1	1					
3.2-3.4											
3.4-3.6						2					
3.6-3.8							1	1			
3.8-4.0							1				

TABLE A.4.2.2 Scatter Diagram (SW Monsoon)

SW monsoon 1980-1994

Period / Height	2-3sec	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13
0.0-0.2m											
0.2-0.4											
0.4-0.6		1	8	16	16	4	1	1			
0.6-0.8		13	139	81	50	26	10		1	1	
0.8-1.0		5	308	210	98	33	12	7	2		1
1.0-1.2			374	614	103	16	7	2	1	1	
1.2-1.4			284	1027	238	45	24	5	1		
1.4-1.6			64	844	257	31	7	3			
1.6-1.8			19	567	274	70	23	7	3		
1.8-2.0			5	232	150	34	12				
2.0-2.2				86	90	10	4	2			
2.2-2.4				28	43	2		2			
2.4-2.6				11	35						
2.6-2.8				1	18	3					
2.8-3.0					7	1					
3.0-3.2					1	1					
3.2-3.4											
3.4-3.6						2					
3.6-3.8											
3.8-4.0											

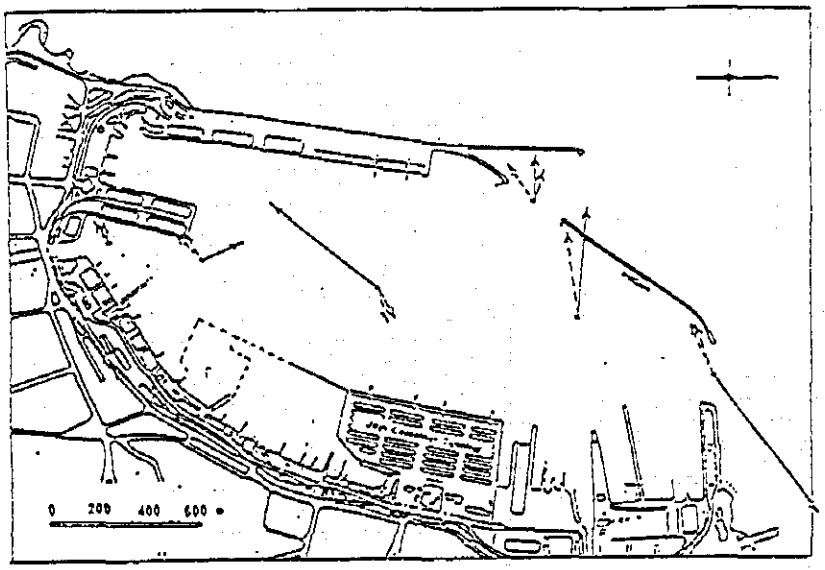
TABLE A.4.2.3 Scatter Diagram (NE Monsoon)

NE monsoon 1980-1994

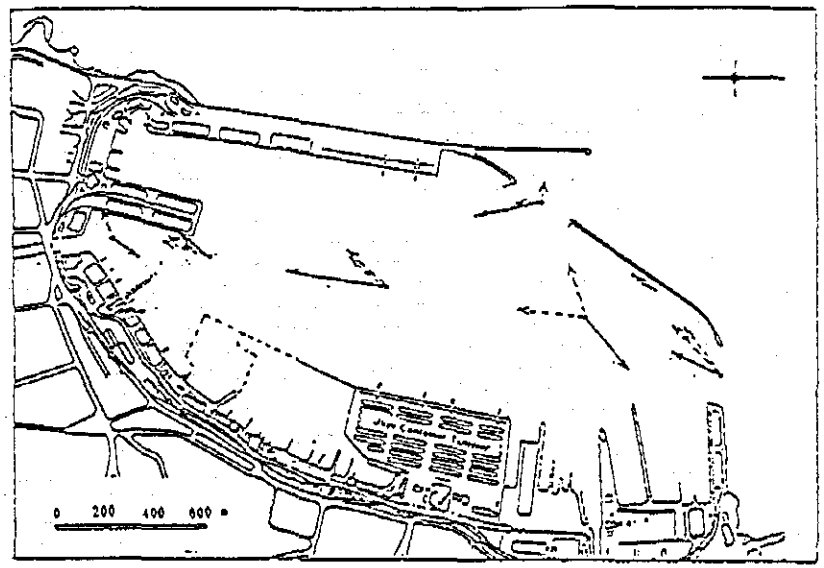
Period / Height	2-3sec	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13
0.0-0.2m											
0.2-0.4	2	30	53	19	4	1					
0.4-0.6	1	252	487	171	42	9	2				
0.6-0.8		301	578	147	44	18	5	1			
0.8-1.0		82	258	34	7	3	4	3	1		
1.0-1.2		12	49	9	1	1	1	1	4		
1.2-1.4		1	10								
1.4-1.6			2								
1.6-1.8											
1.8-2.0											
2.0-2.2											
2.2-2.4											
2.4-2.6											
2.6-2.8											
2.8-3.0											
3.0-3.2											
3.2-3.4											
3.4-3.6											
3.6-3.8											
3.8-4.0											

FIGURE A.4.3.1 The Spatial Distribution of the Currents in Harbour Basin

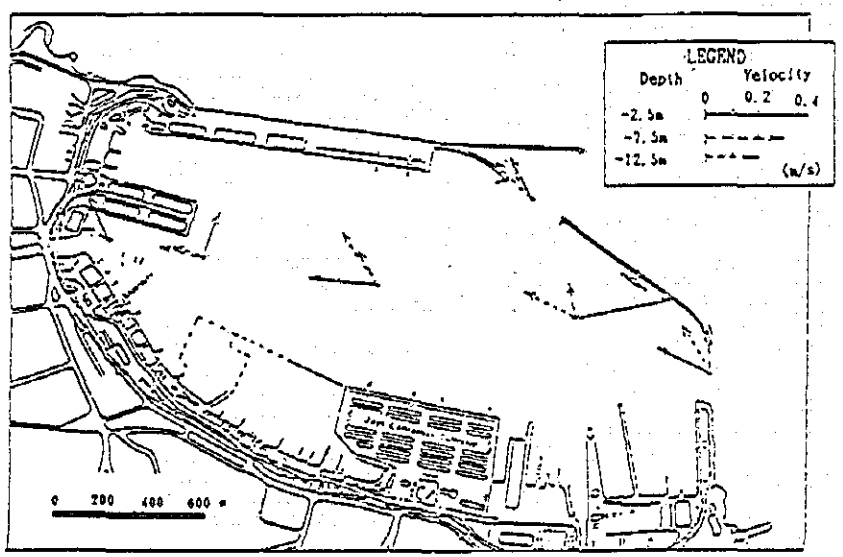
1) Rising tide 13:15-13:45, 23 August 1993



3) Falling tide 19:45-20:15, 23 August 1993



2) High tide 16:30-17:00, 23 August 1993



4) Low tide 23:00-23:30, 23 August 1993

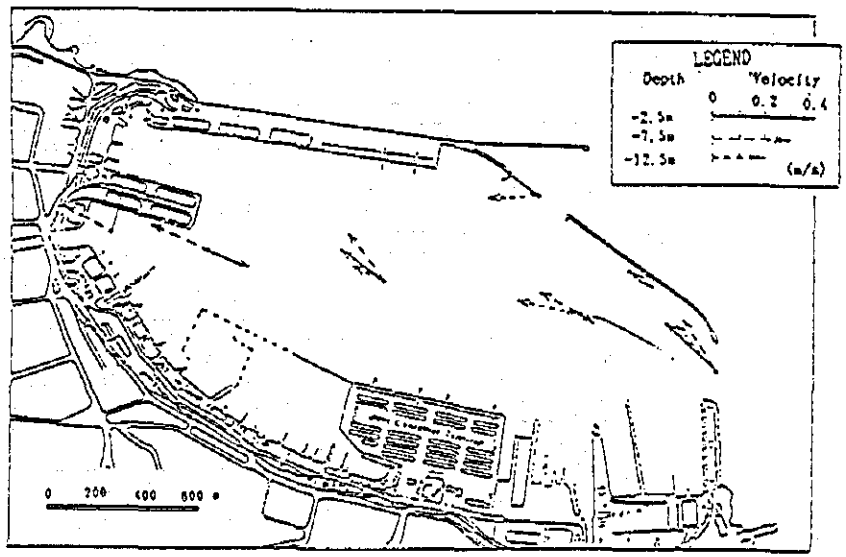
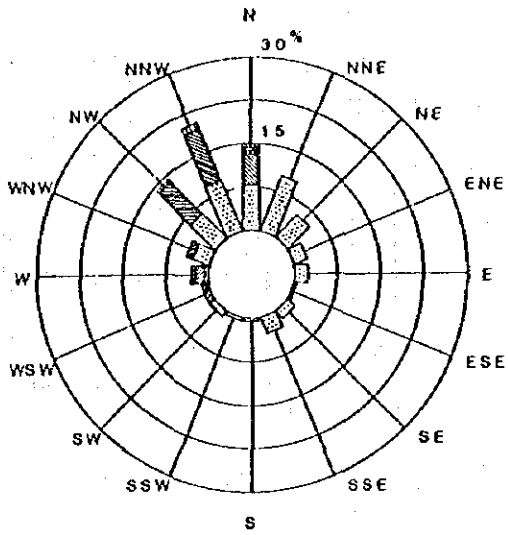


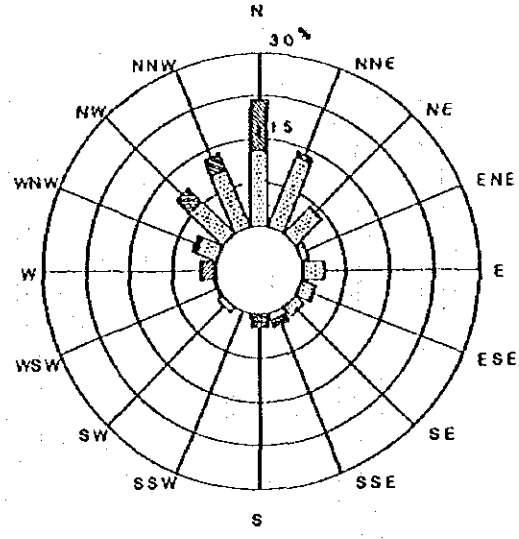
FIGURE A.4.3.2(1) Occurrence Frequency of Offshore Currents

ST. H-1 B+1.0M
October, 1995

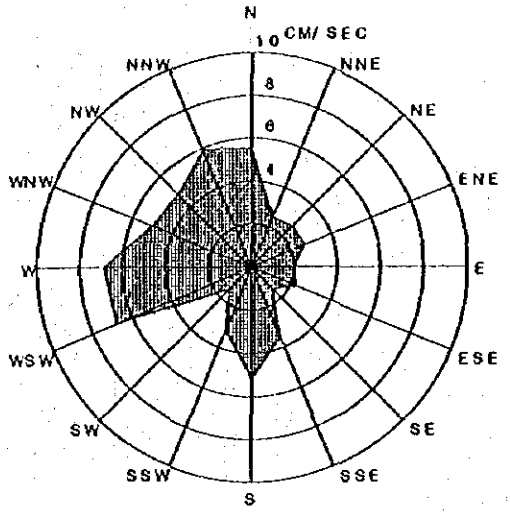
ST. H-1 B+1.0M
November, 1995

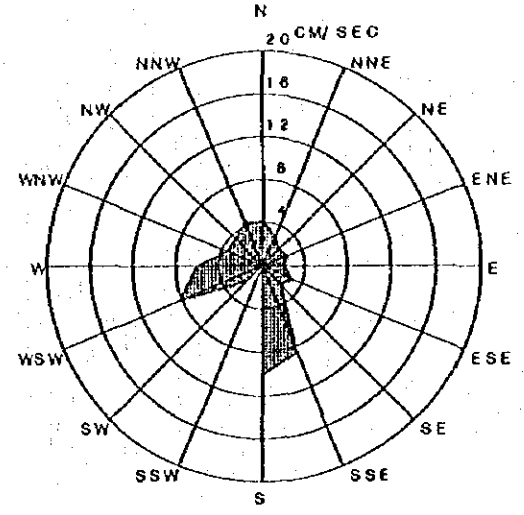
Occurrence frequency of current direction



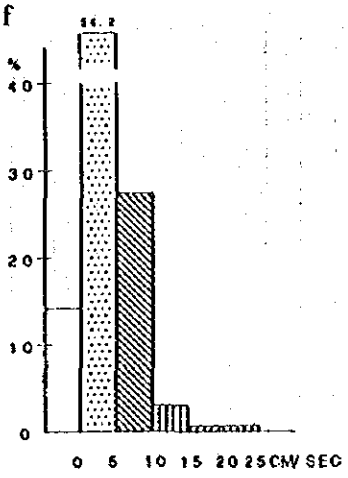


Occurrence frequency of mean current velocity





Occurrence frequency of current velocity



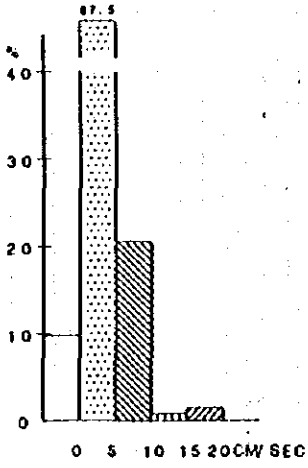
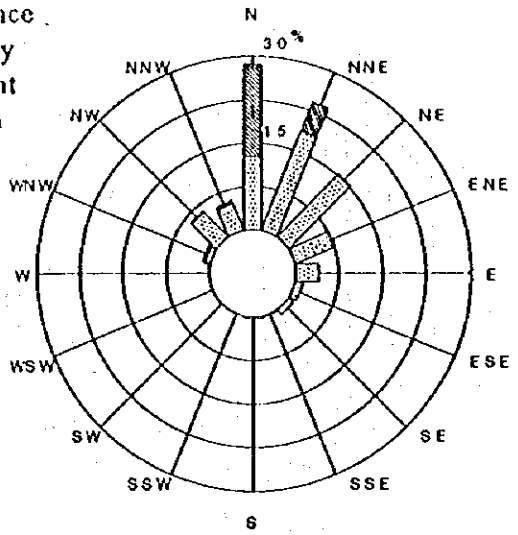


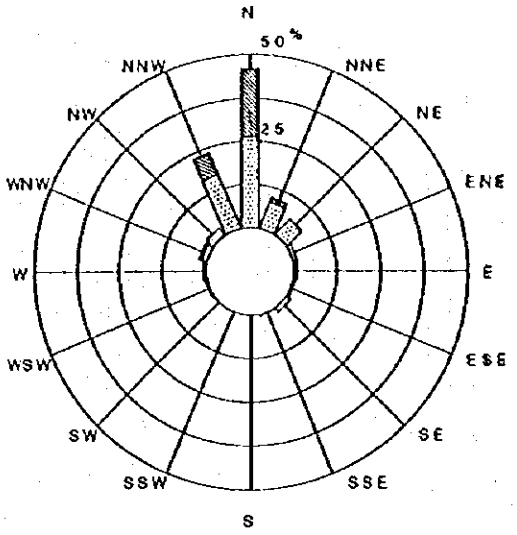
FIGURE A.4.3.2(2) Occurrence Frequency of Offshore Currents

ST. H-1 B+1.0M
December, 1995

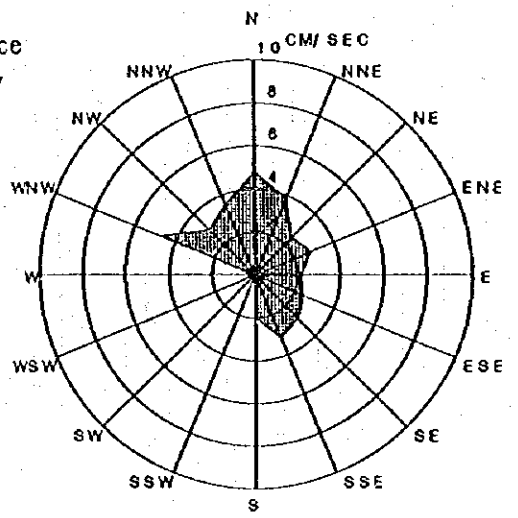
ST. H-1 B+1.0M
January, 1996

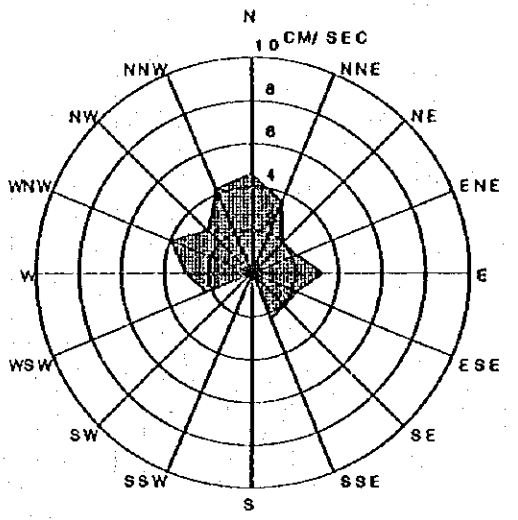
Occurrence frequency of current direction





Occurrence frequency of mean current velocity





Occurrence frequency of current velocity

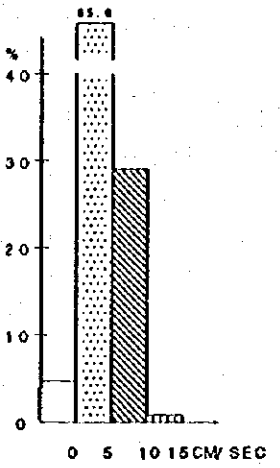
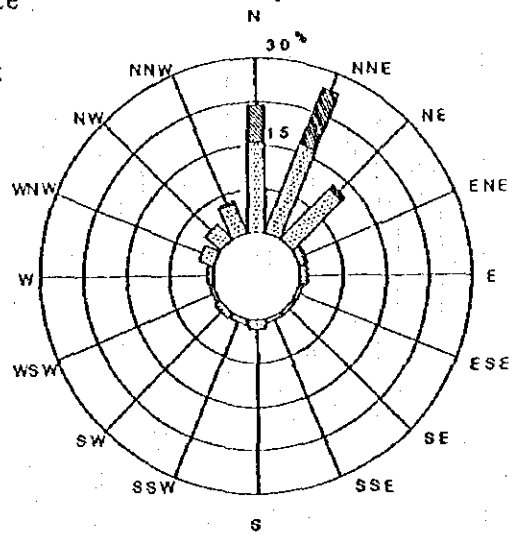


FIGURE A.4.3.2(3) Occurrence Frequency of Offshore Currents

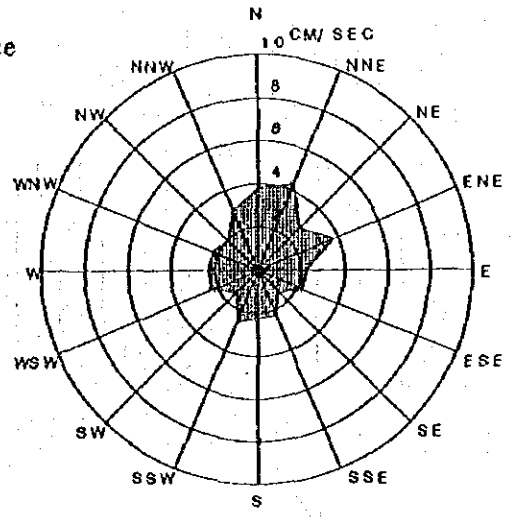
ST. H-1 B+1.0M

Febroury, 1996

Occurrence frequency of current direction



Occurrence frequency of mean current velocity



Occurrence frequency of current velocity

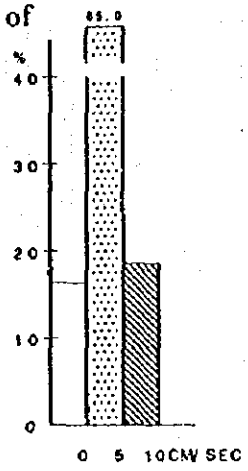


FIGURE A.4.3.3 Location of Spot Current Observation

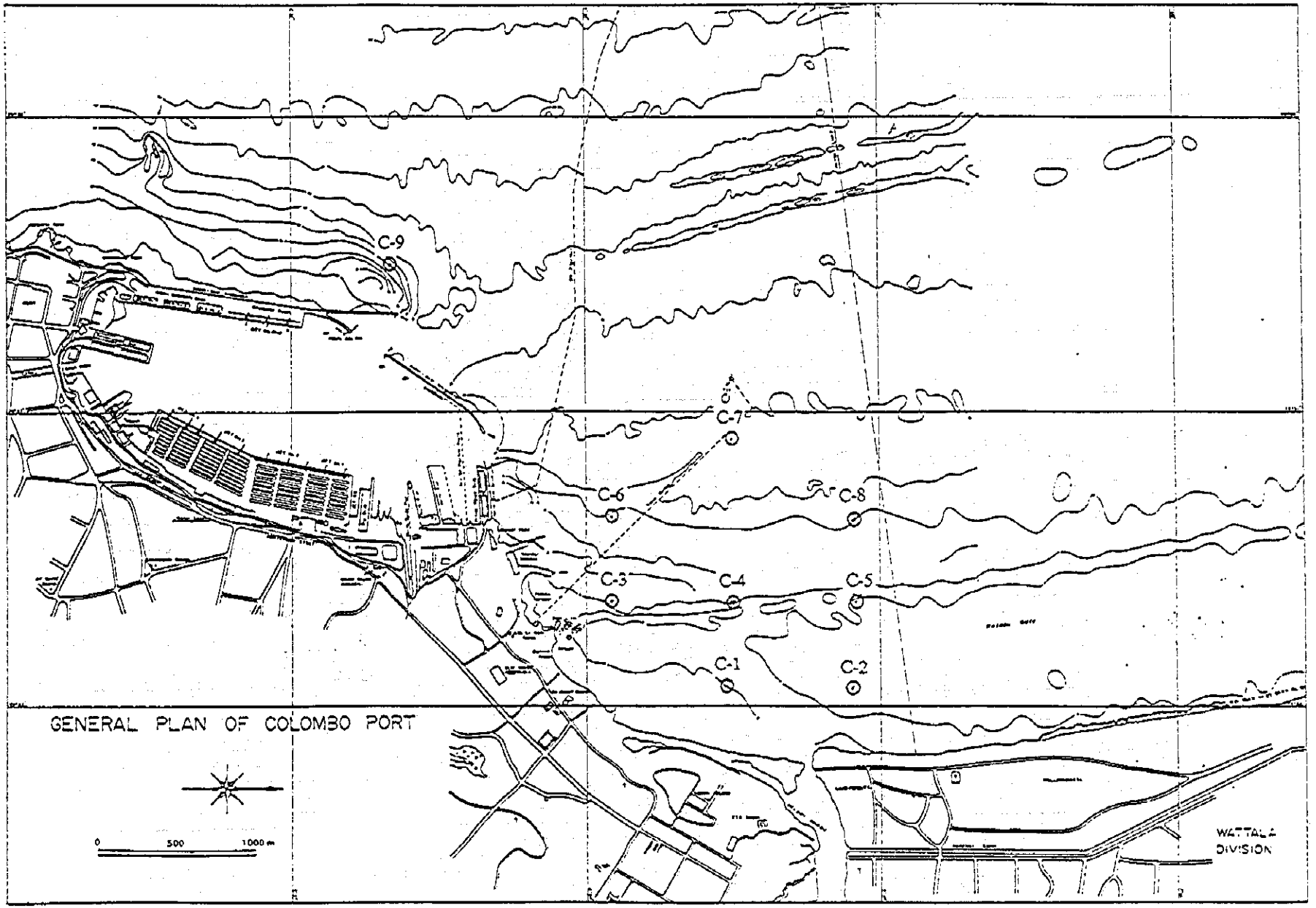


TABLE A.4.3.1 (1) Results of Spot Current Observation

	POINT C1							POINT C2							POINT C3						
	TIME	SURFACE		MIDDLE		BOTTOM		TIME	SURFACE		MIDDLE		BOTTOM		TIME	SURFACE		MIDDLE		BOTTOM	
		Velocity	Direction	Velocity	Direction	Velocity	Direction		Velocity	Direction	Velocity	Direction	Velocity	Direction		Velocity	Direction	Velocity	Direction	Velocity	Direction
5th 6-7																					
7-8								7:42	0.39m/s	73	0.49m/s	81	0.41m/s	57							
8-9								8:44	0.21	10	0.19	26	0.19	22							
9-10								9:42	0.24	135	0.24	15	0.20	358							
10-11	10:36	0.27m/s	359	0.27m/s	349	0.33m/s	310	10:52	0.23	59	0.19	182	0.27	191	10:26	0.36m/s	329	0.42m/s	0	0.34m/s	345
11-12	11:26	0.49	292	0.47	276	0.48	267	11:48	0.17	64	0.18	18	0.24	283	11:16	0.39	299	0.29	272	0.2	307
12-13	12:58	0.29	331	0.41	265	0.35	278								12:38	0.56	273	0.5	250	0.47	257
13-14																					
14-15	14:36	0.66	54	1.07	50	0.92	42	14:12	0.51	106	0.48	351	1.00	177	14:14	0.87	54	1.27	45	1.19	43
15-16	15:42	0.20	58	0.26	57	0.35	334	15:08	0.29	209	0.38	308	0.48	26	15:20	0.49	234	0.32	64	0.2	32
16-17	16:54	0.55	182	0.53	53	0.44	33	16:08	0.27	165	0.32	356	0.26	105	16:36	0.39	241	0.32	200	0.22	42
17-18	17:50	0.43	223	0.49	216	0.40	57	17:18	0.23	108	0.24	145	0.32	115	17:30	0.4	258	0.45	17	0.4	265
18-19								18:12	0.21	177	0.28	131	0.28	65							
19-20																					
20-21																					
21-22																					
22-23																					
23-24																					
6th 0-1																					
1-2																					
2-3																					
3-4																					
4-5																					
5-6																					
6-7								6:34	0.41	359	0.28	26	0.26	37							
7-8	7:24	0.27	161	0.33	33	0.31	10	7:38	0.27	0	0.21	11	0.16	82	7:01	0.32	26	0.21	50	0.17	43
8-9	8:30	0.34	31	0.25	94	0.24	36	8:46	0.34	1	0.32	0	0.23	132	8:00	0.3	252	0.31	83	0.19	356
9-10								9:44	0.32	76	0.27	68	0.19	21							
10-11	10:12	0.23	246	0.21	42	0.21	298								10:22	0.37	55	0.19	307	0.12	136
11-12																					
12-13																					
13-14																					
14-15								14:34	0.41	171	0.31	147	0.31	76	14:06	0.46	10	0.21	19	0.26	16
15-16	15:34	0.66	340	0.23	10	0.23	352								15:12	1.05	17	0.82	20	0.67	5
16-17								16:06	0.50	265	0.40	96	0.45	22							
17-18								17:28	0.39	77	0.30	100	0.38	42	17:30	0.89	15	1.16	350	0.43	348
18-19																					

TABLE A.4.3.1 (2) Results of Spot Current Observation

	POINT C4							POINT C5							POINT C6						
	TIME	SURFACE		MIDDLE		BOTTOM		TIME	SURFACE		MIDDLE		BOTTOM		TIME	SURFACE		MIDDLE		BOTTOM	
		Velocity	Direction	Velocity	Direction	Velocity	Direction		Velocity	Direction	Velocity	Direction	Velocity	Direction		Velocity	Direction	Velocity	Direction	Velocity	Direction
5th 6-7																					
7-8								7:52	0.39m/s	49	0.28m/s	306	0.26m/s	28							
8-9								8:58	0.27	7	0.33	72	0.28	358							
9-10								9:52	0.25	10	0.28	24	0.26	43							
10-11	10:46	0.17m/s	284	0.38m/s	349	0.21m/s	321	11:00	0.18	28	0.23	266	0.27	346	10:20	0.27m/s	344	0.43m/s	356	0.55m/s	346
11-12	11:36	0.52	282	0.43	276	0.38	295	11:58	0.19	169	0.19	48	0.18	158	11:06	0.38	355	0.15	6	0.13	359
12-13															12:38	0.56	273	0.50	250	0.47	257
13-14	13:08	0.54	74	0.29	36	0.29	7														
14-15	14:26	0.81	49	1.10	47	1.01	42	14:22	0.35	199	0.38	106	0.30	54	14:02	0.93	54	1.17	50	0.58	39
15-16	15:32	0.46	231	0.33	160	0.39	26	15:18	0.44	85	0.30	69	0.47	336	15:10	0.74	251	0.20	206	0.47	30
16-17	16:46	0.43	62	0.32	58	0.36	79	16:18	0.3	332	0.28	9	0.29	30	16:24	0.29	54	0.33	253	0.35	64
17-18	17:40	0.46	294	0.56	59	0.38	69	17:28	0.23	189	0.25	5	0.36	26	17:20	0.35	247	0.48	77	0.40	258
18-19								18:22	0.18	230	0.28	17	0.34	19							
19-20																					
20-21																					
21-22																					
22-23																					
23-24																					
6th 0-1																					
1-2																					
2-3																					
3-4																					
4-5																					
5-6																					
6-7								6:46	0.33	334	0.25	321	0.18	86	6:51	0.34	12	0.42	76	0.37	28
7-8	7:14	0.30	27	0.28	284	0.23	73	7:54	0.43	310	0.28	358	0.19	352	7:50	0.84	231	0.19	134	0.18	98
8-9	8:22	0.47	255	0.27	60	0.56	45	8:58	0.31	356	0.32	343	0.28	1	8:50	0.33	249	0.26	9	0.15	40
9-10								9:56	0.32	71	0.34	24	0.24	79							
10-11	10:02	0.28	44	0.22	57	0.24	49								10:34	0.54	268	0.20	75	0.19	353
11-12																					
12-13																					
13-14															13:48	0.63	149	0.28	115	0.14	130
14-15	14:28	0.61	319	0.35	2	0.23	3	14:22	0.26	106	0.48	310	0.21	58	14:46	0.51	0	0.46	2	0.54	77
15-16	15:24	0.63	259	0.28	11	0.21	334	15:54	0.33	161	0.24	145	0.23	63							
16-17																					
17-18								17:16	0.32	231	0.29	126	0.34	297	17:16	0.50	279	0.39	297	0.14	293
18-19																					

TABLE A.4.3.1 (3) Results of Spot Current Observation

	POINT C7							POINT C8							POINT C9						
	TIME	SURFACE		MIDDLE		BOTTOM		TIME	SURFACE		MIDDLE		BOTTOM		TIME	SURFACE		MIDDLE		BOTTOM	
		Velocity	Direction	Velocity	Direction	Velocity	Direction		Velocity	Direction	Velocity	Direction	Velocity	Direction		Velocity	Direction	Velocity	Direction	Velocity	Direction
5th 6-7															6:45			0.010m/s	179		
7-8															7:45			0.010	339		
8-9								8:04	0.84m/s	254	0.59m/s	48	0.33m/s	34	8:45			0.012	204		
9-10	9:28	0.28m/s	337	0.29m/s	46	0.26m/s	42	9:08	0.35	358	0.28	33	0.25	357	9:45			0.010	203		
10-11	10:10	0.22	38	0.32	49	0.32	6	10:00	0.30	348	0.37	59	0.44	11	10:45			0.070	24		
11-12	11:20	0.19	28	0.26	46	0.12	332	11:10	0.28	352	0.25	50	0.18	327	11:45			0.054	23		
12-13	12:18	0.29	8	0.29	37	0.21	236	12:08	0.22	23	0.27	52	0.23	44	12:45			0.052	72		
13-14															13:45			0.030	279		
14-15	14:44	0.38	167	0.37	20	0.5	122	14:32	0.43	313	0.30	358	0.32	78	14:45			0.068	249		
15-16	15:40	0.44	172	0.41	125	0.30	19	15:28	0.32	271	0.30	123	0.50	91	15:45			0.090	229		
16-17	16:38	0.24	300	0.31	309	0.37	10	16:28	0.23	244	0.30	37	0.32	79	16:45			0.032	259		
17-18	17:48	0.29	236	0.21	137	0.37	52	17:38	0.26	191	0.23	235	0.28	4	17:45			0.064	209		
18-19	18:40	0.23	282	0.27	118	0.20	96	18:30	0.22	248	0.16	193	0.38	5	18:45			0.038	199		
19-20															19:45			0.028	219		
20-21															20:45			0.042	238		
21-22															21:45			0.054	224		
22-23															22:45			0.068	217		
23-24															23:45			0.058	64		
6th 0-1															0:45			0.024	42		
1-2															1:45			0.052	49		
2-3															2:45			0.030	42		
3-4															3:45			0.016	245		
4-5															4:45			0.044	242		
5-6															5:45			0.020	291		
6-7								6:56	0.40	2	0.23	333	0.27	292	6:45			0.034	131		
7-8	7:06	0.43	351	0.45	12	0.28	2	7:56	0.41	265	0.33	17	0.29	355	7:45			0.060	261		
8-9	8:18	0.37	282	0.39	21	0.33	5	8:58	0.41	351	0.37	3	0.30	360	8:45			0.036	325		
9-10	9:20	0.43	8	0.37	12	0.23	17	9:58	0.30	336	0.28	8	0.21	12	9:45			0.028	201		
10-11	10:20	0.31	286	0.34	40	0.22	25								10:45			0.028	306		
11-12															11:45			0.058	42		
12-13															12:45			0.022	349		
13-14	13:54	0.63	38	1.08	38	0.48	44								13:45			0.034	343		
14-15								14:10	0.39	97	0.51	330	0.55	43	14:45			0.058	240		
15-16	15:24	0.21	266	0.52	70	0.4	66	15:40	0.39	177	0.32	61	0.28	351	15:45			0.068	242		
16-17	16:48	0.41	140	0.28	75	0.19	67								16:45			0.144	222		
17-18								17:04	0.37	204	0.21	27	0.35	77	17:45			0.076	201		
18-19																					

FIGURE A.4.3.4 The Spatial Distribution of the Currents in Northern Area

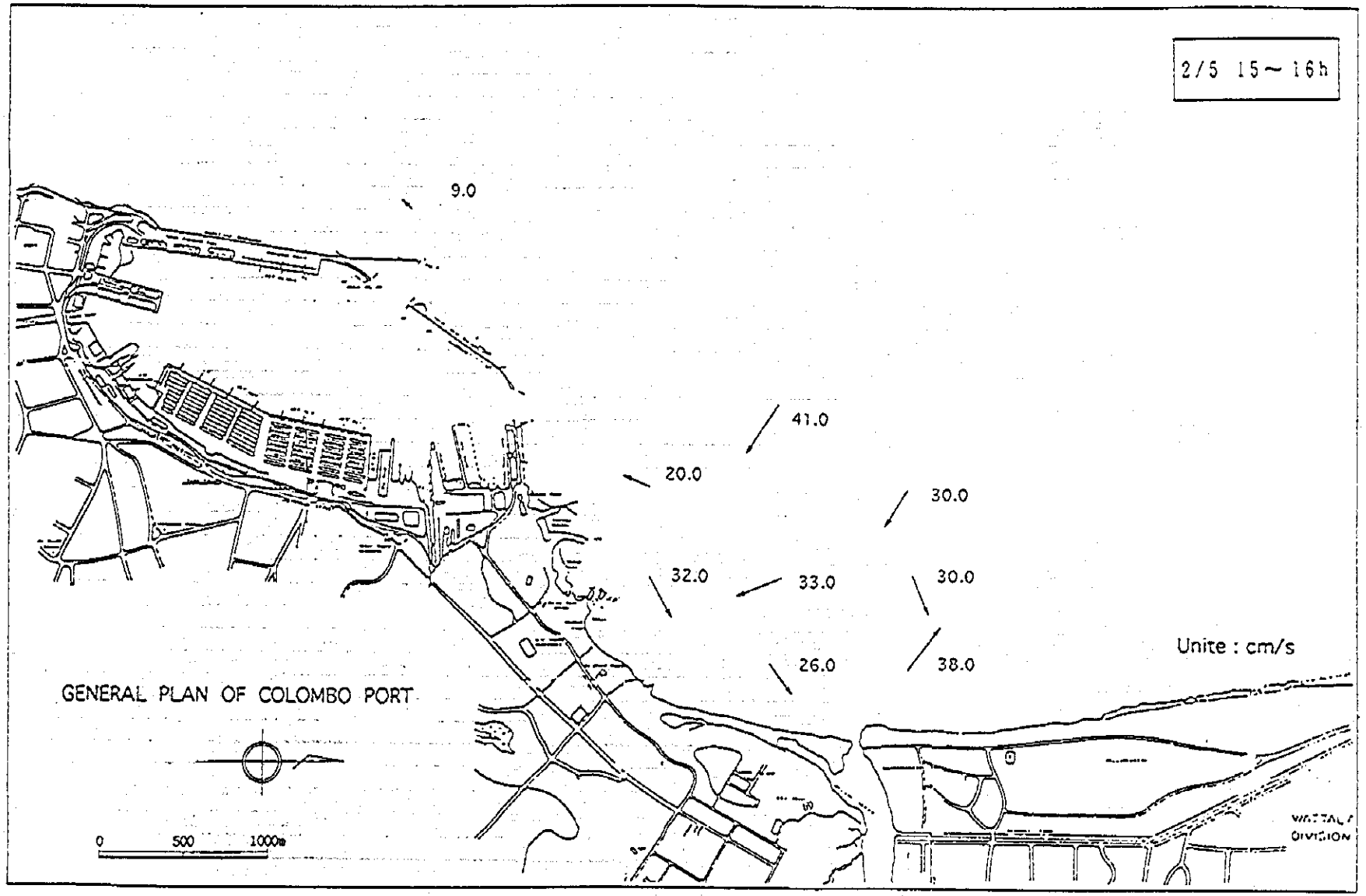


FIGURE A.4.3.5(1) Result of Littoral Current Observations

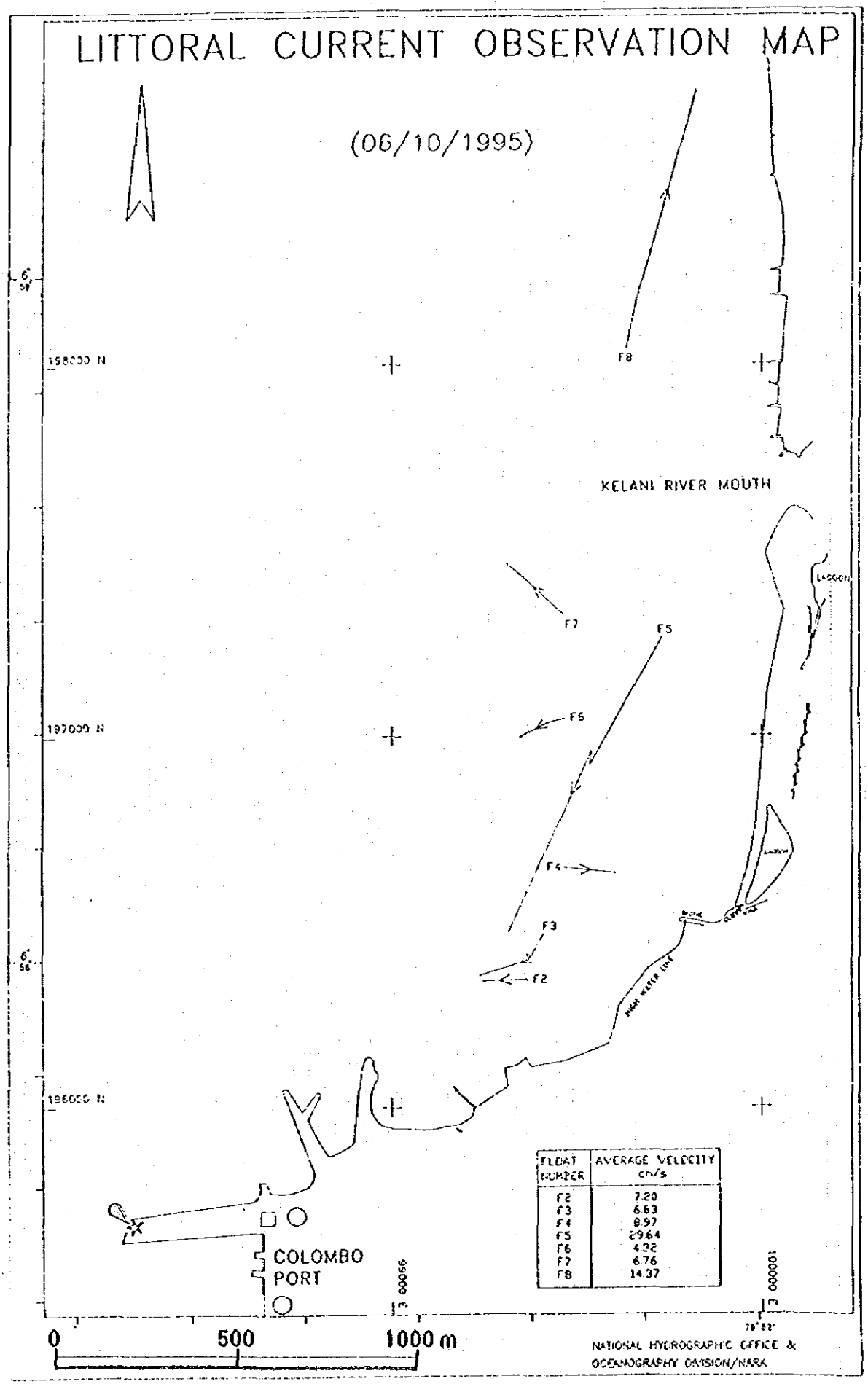


FIGURE A.4.3.5(2) Result of Littoral Current Observations

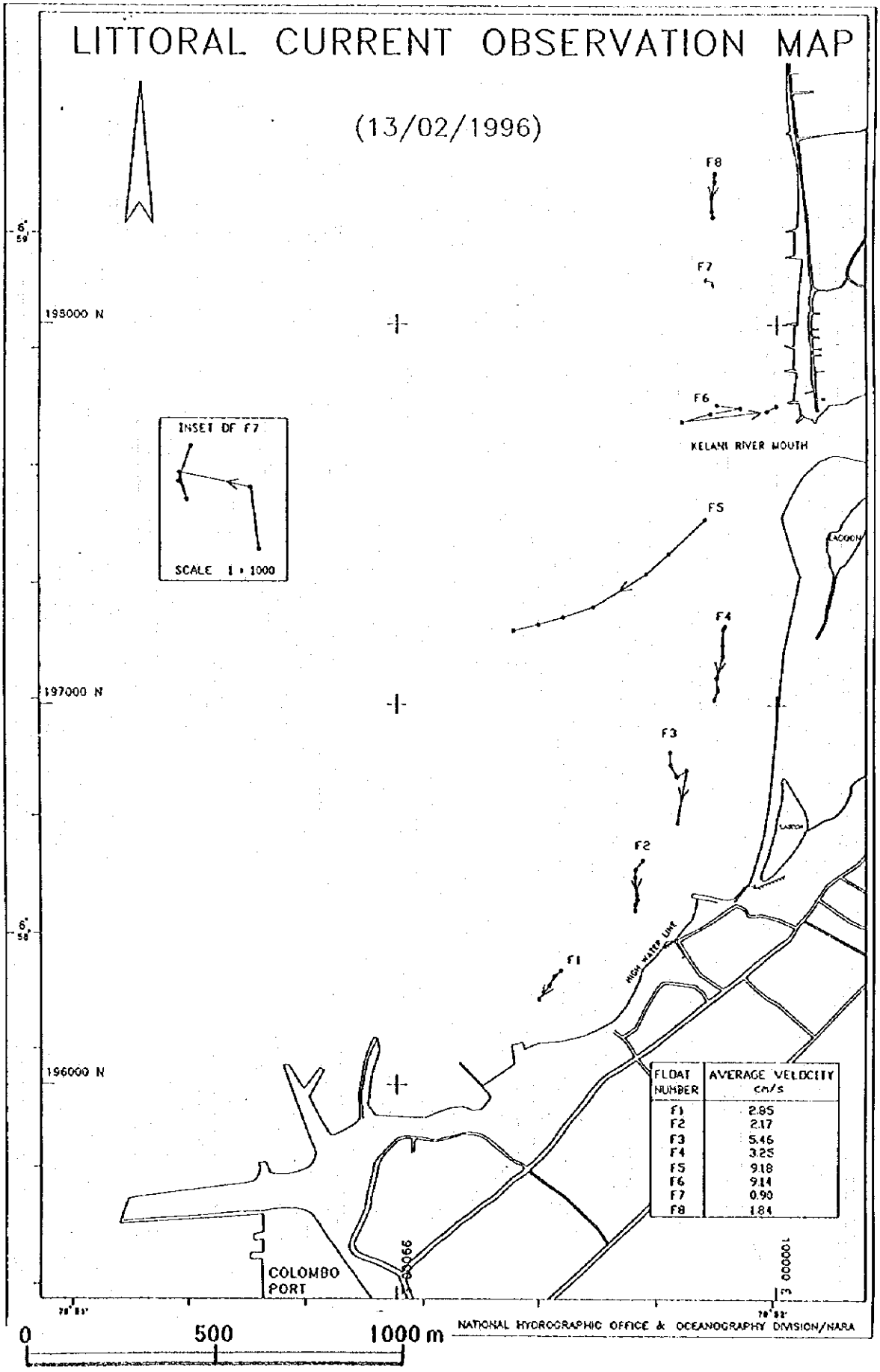


FIGURE A.4.6.1 Echo Sounding Area

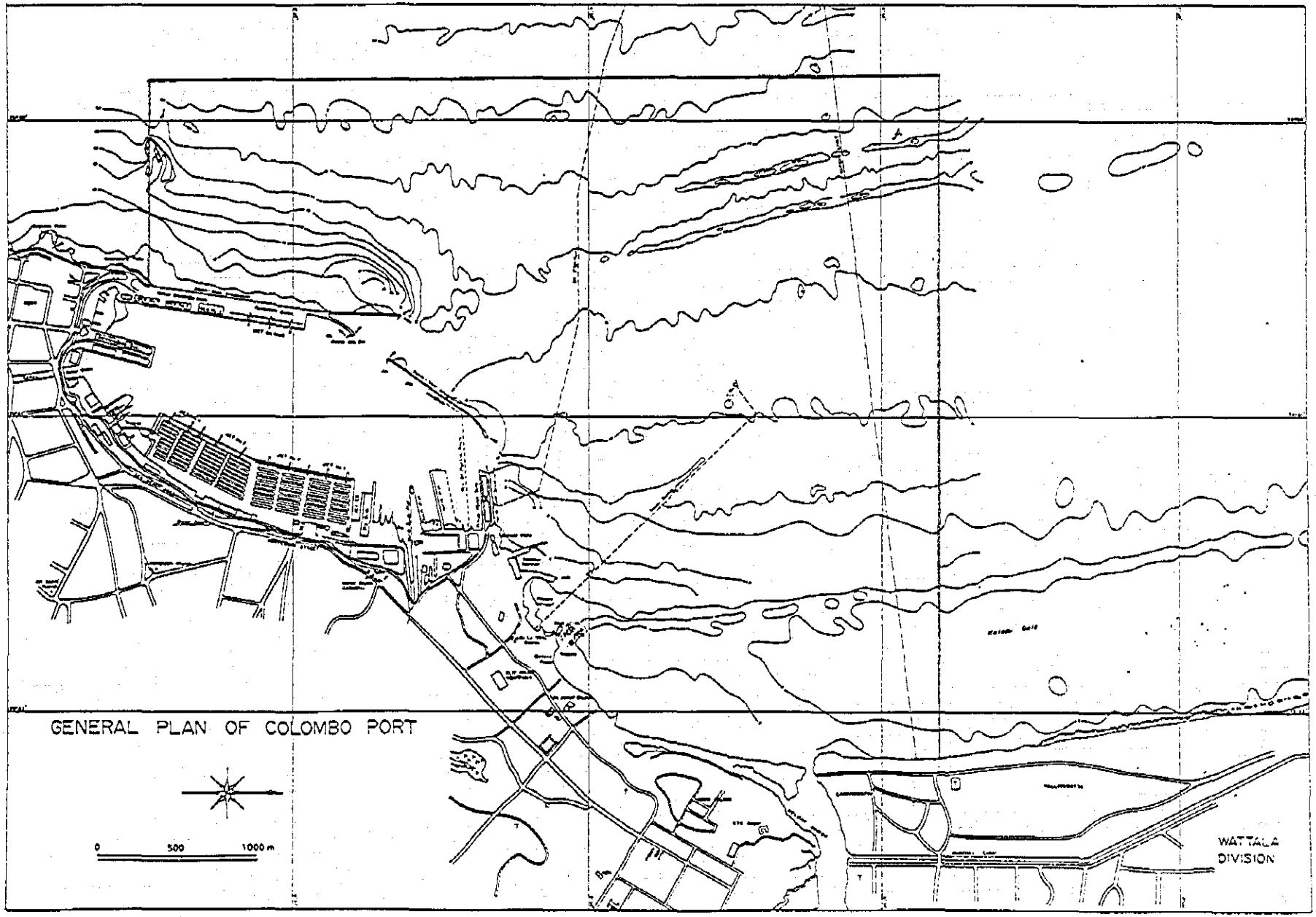


FIGURE A.4.6.2 Result of Bathymetric Survey

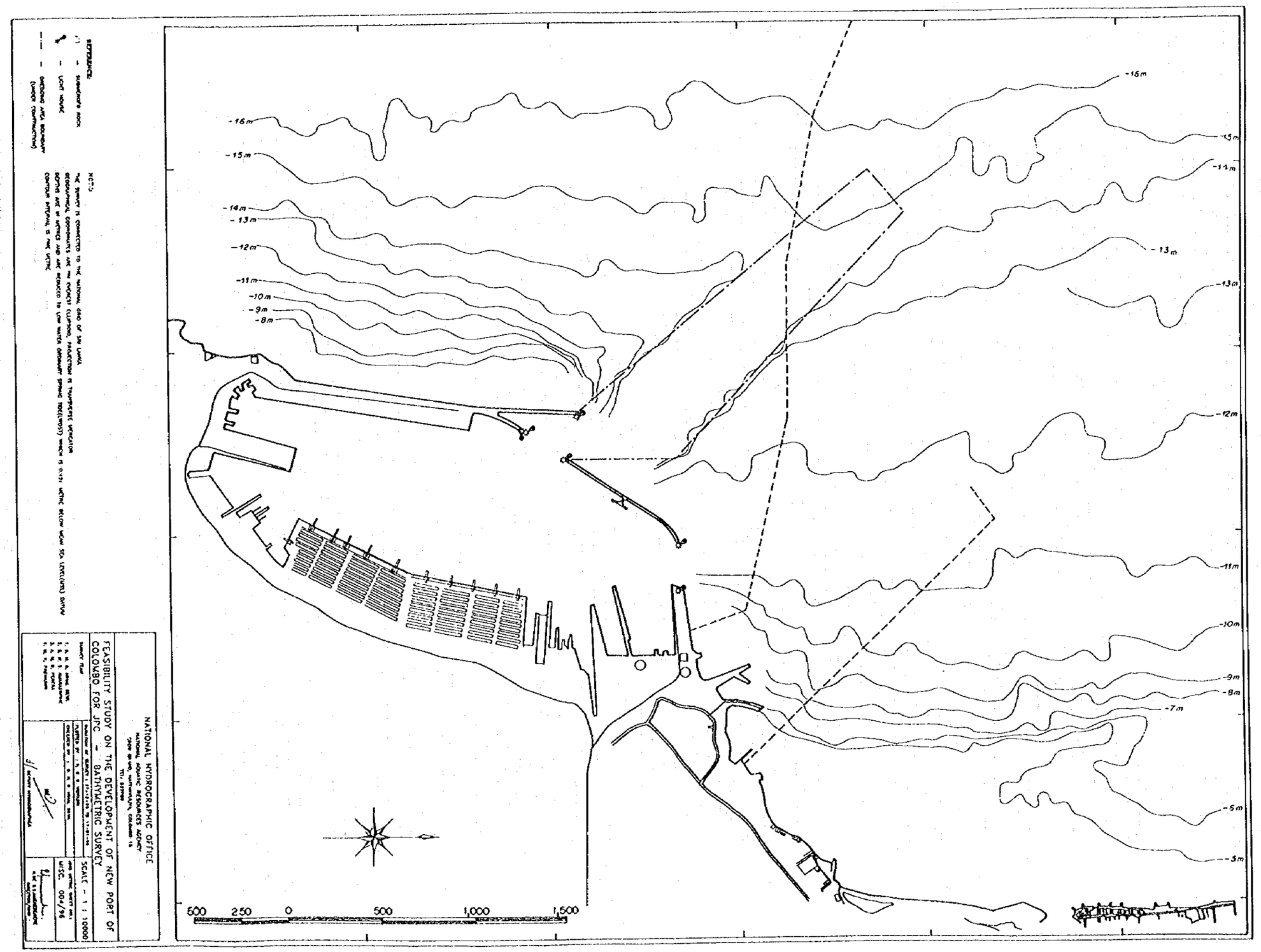


FIGURE A.4.7.1 (1) Result of Shoreline Survey

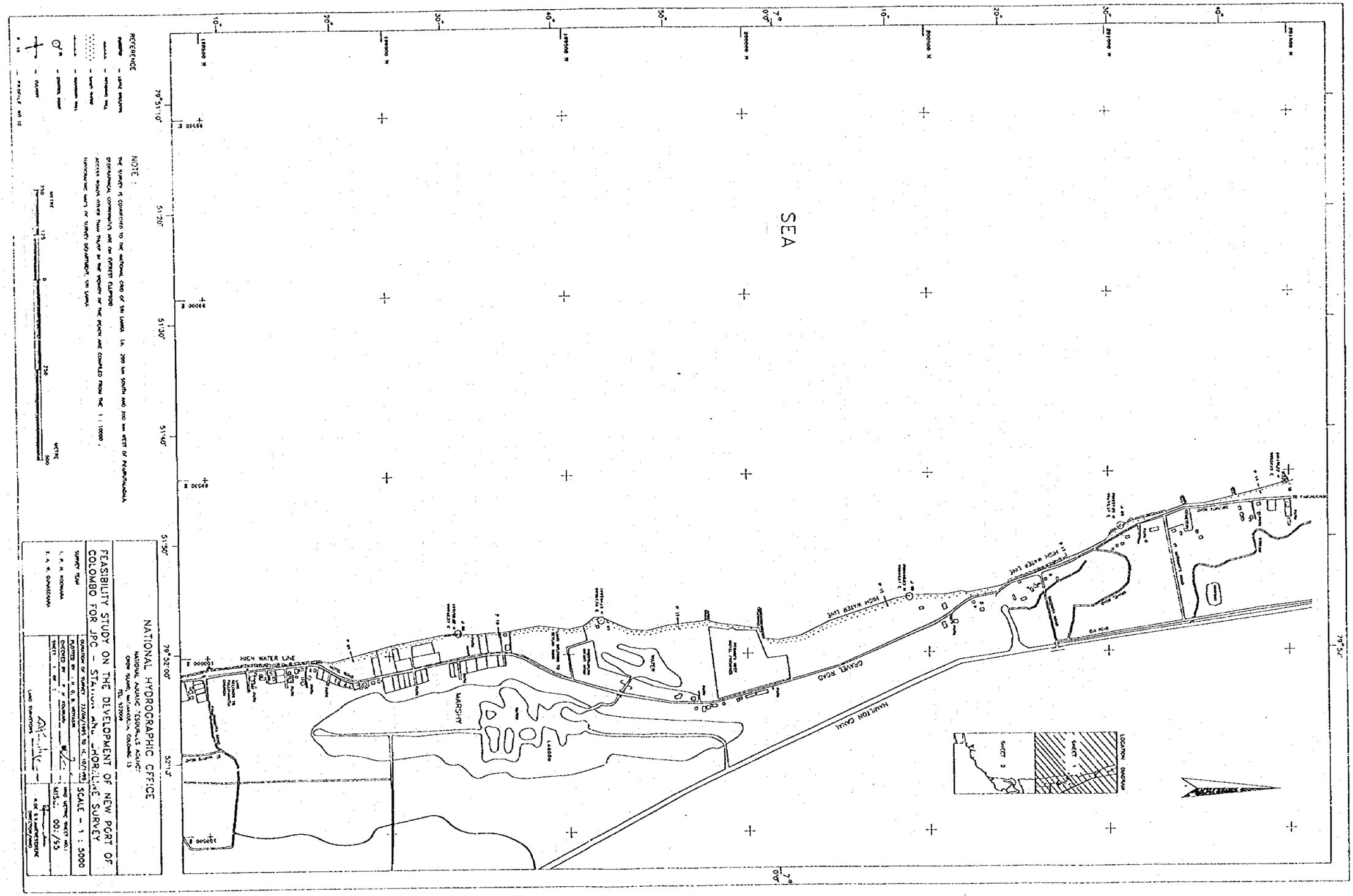


FIGURE A.4.7.1 (2) Result of Shoreline Survey

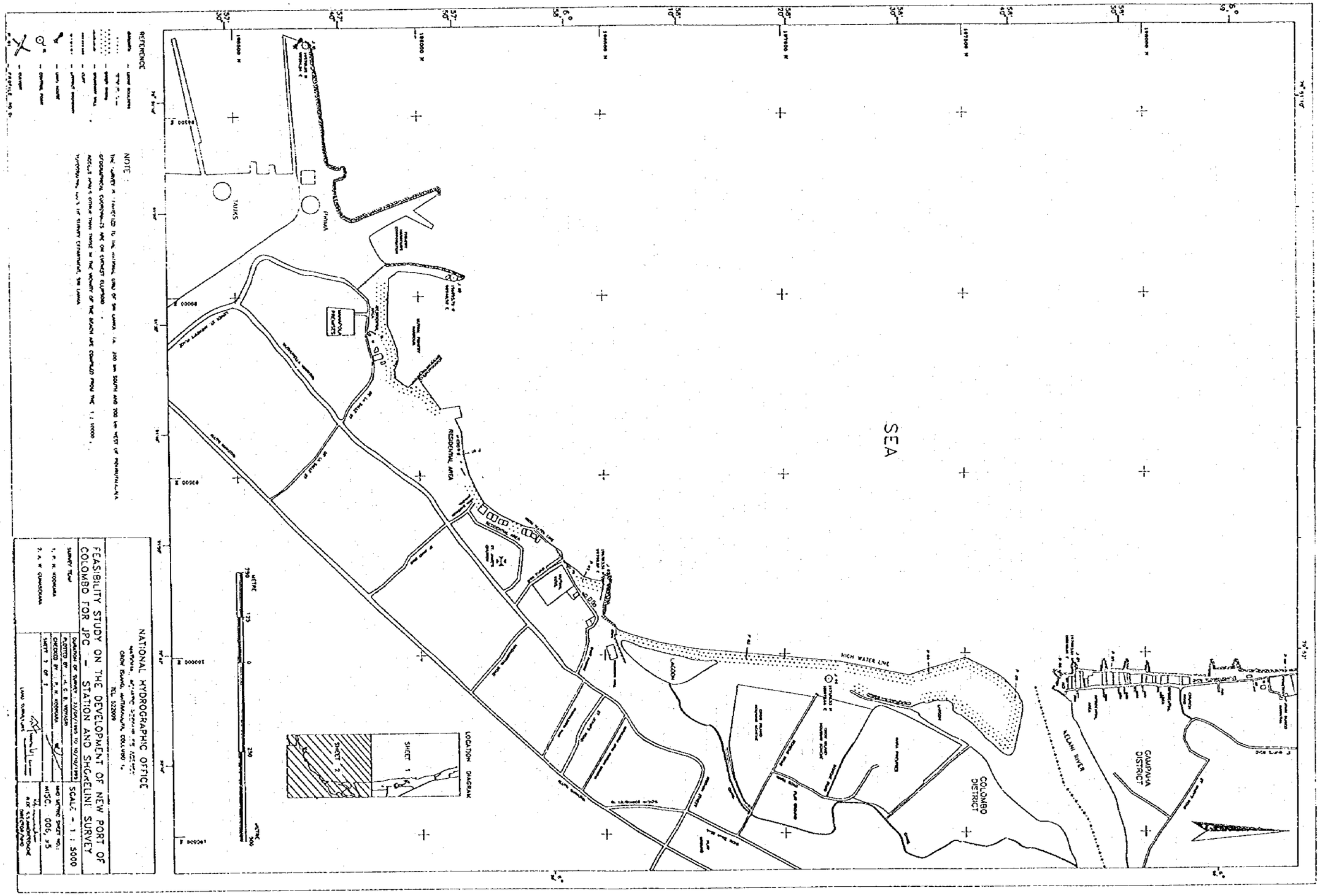
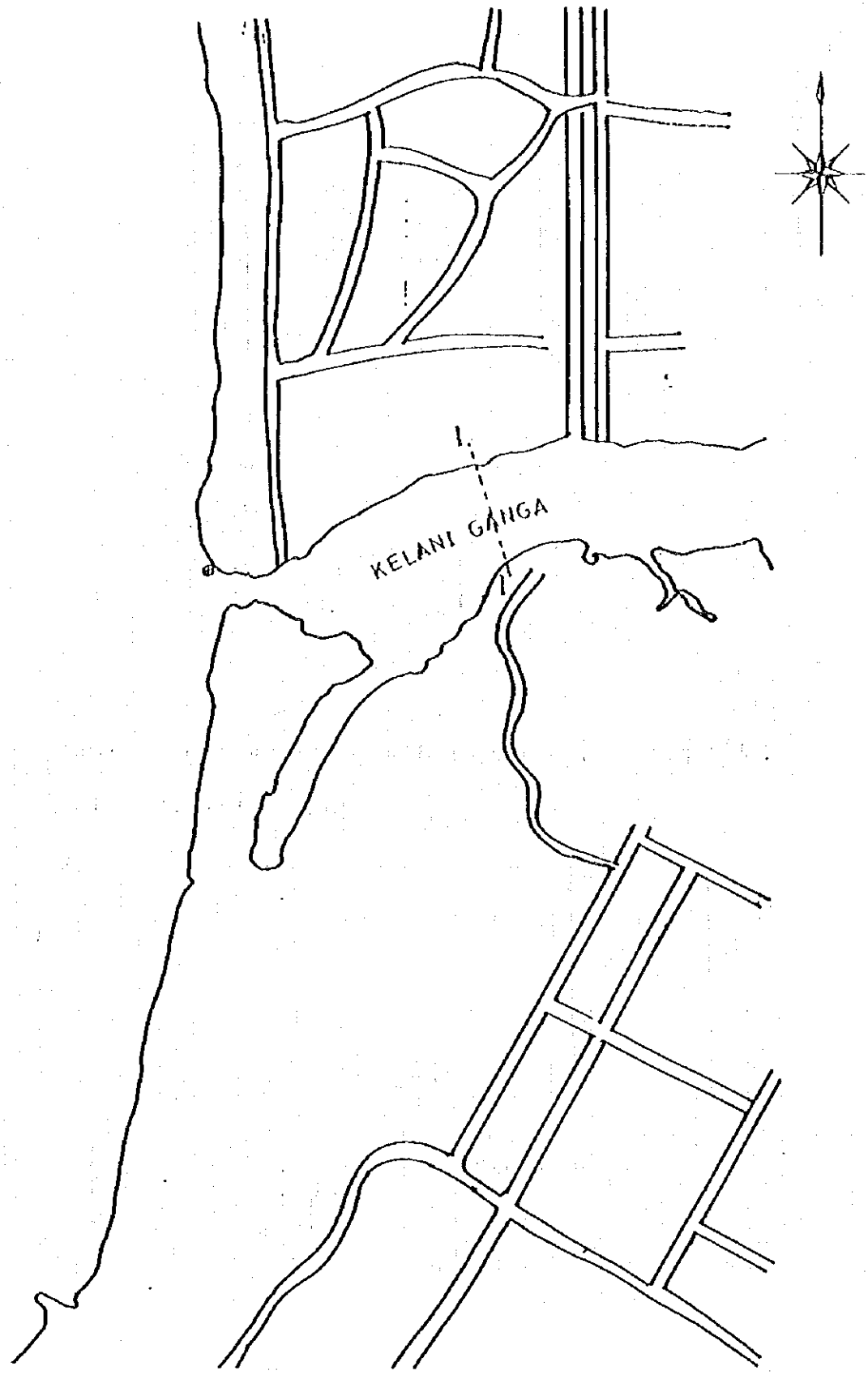


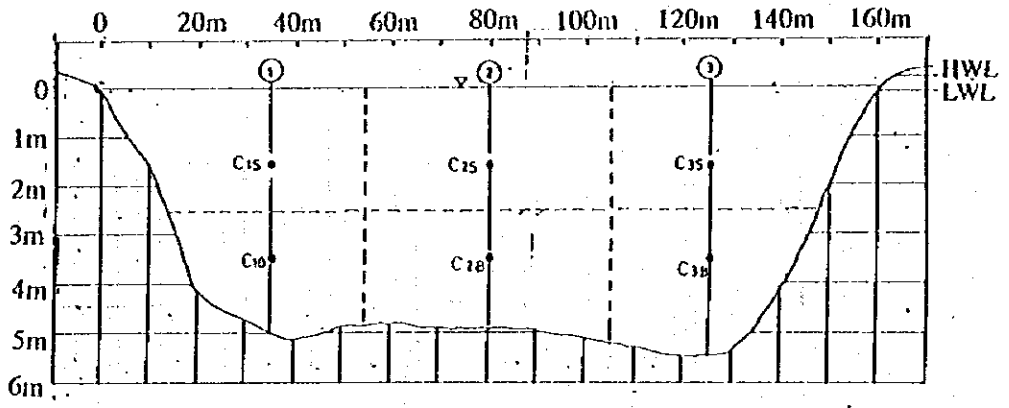
FIGURE A.4.8.1 Location of Sediment Transport Survey



⊗ Tide Gauge

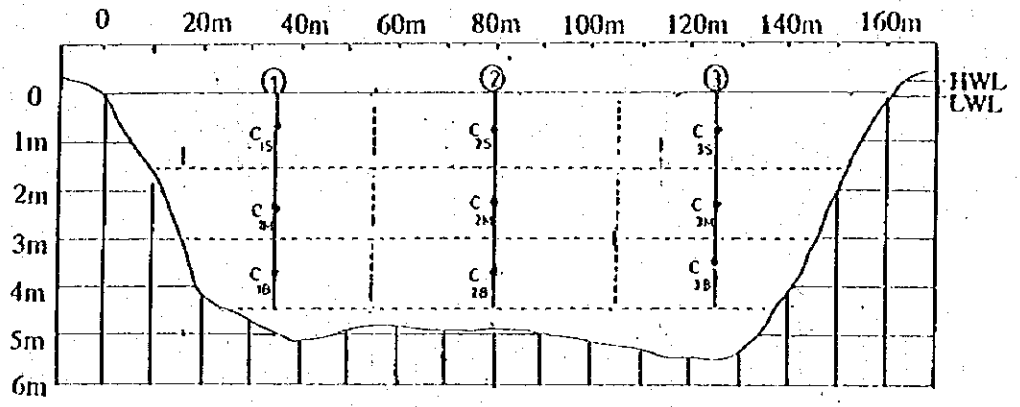
Scale : 1 : 10,000

FIGURE A.4.8.2 Cross Section and Sampling Location (SW Monsoon)



CURRENT METER POSITION			RESPECTIVE AREAS	
NOS	S	B	S m^2	B m^2
1	C_{1S}	C_{1B}	119.2	85.1
2	C_{2S}	C_{2B}	125.6	106.6
3	C_{3S}	C_{3B}	121.0	100.8

FIGURE A.4.8.3 Cross Section and Sampling Location (NE Monsoon)



CURRENT METER POSITION				RESPECTIVE AREAS		
NOS	S	M	B	S m^2	M m^2	B m^2
1	C_{1S}	C_{1M}	C_{1B}	75	63.25	52.5
2	C_{2S}	C_{2M}	C_{2B}	75	75	75
3	C_{3S}	C_{3M}	C_{3B}	75	63.7	54

FIGURE A.4.8.4 Tidal Variation at Kelani River Mouth (SW Monsoon)

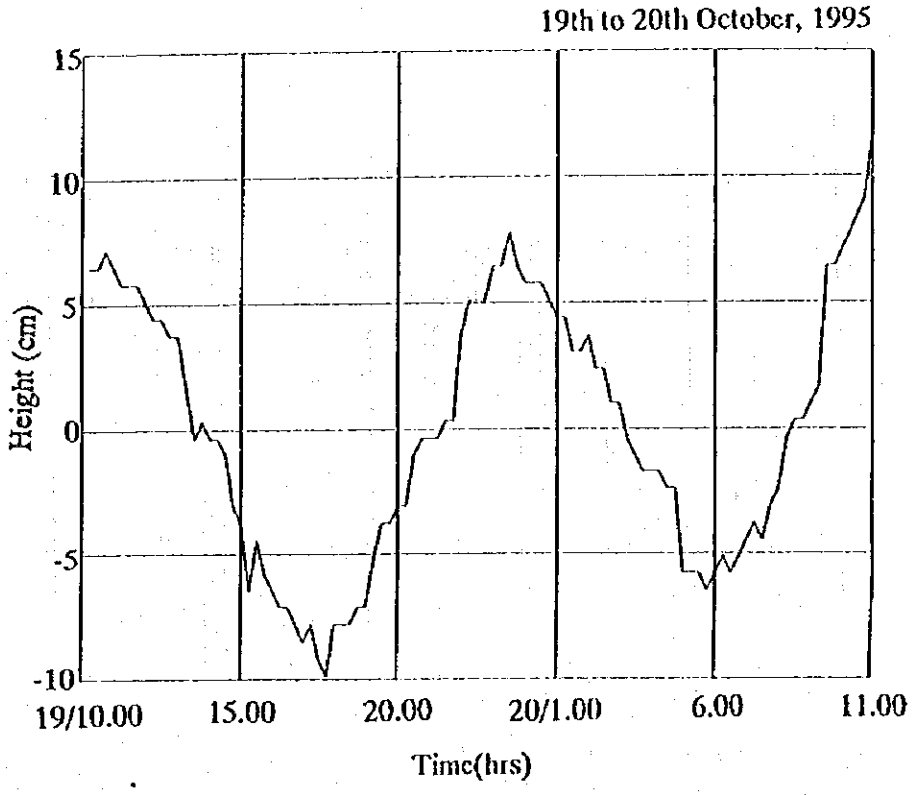
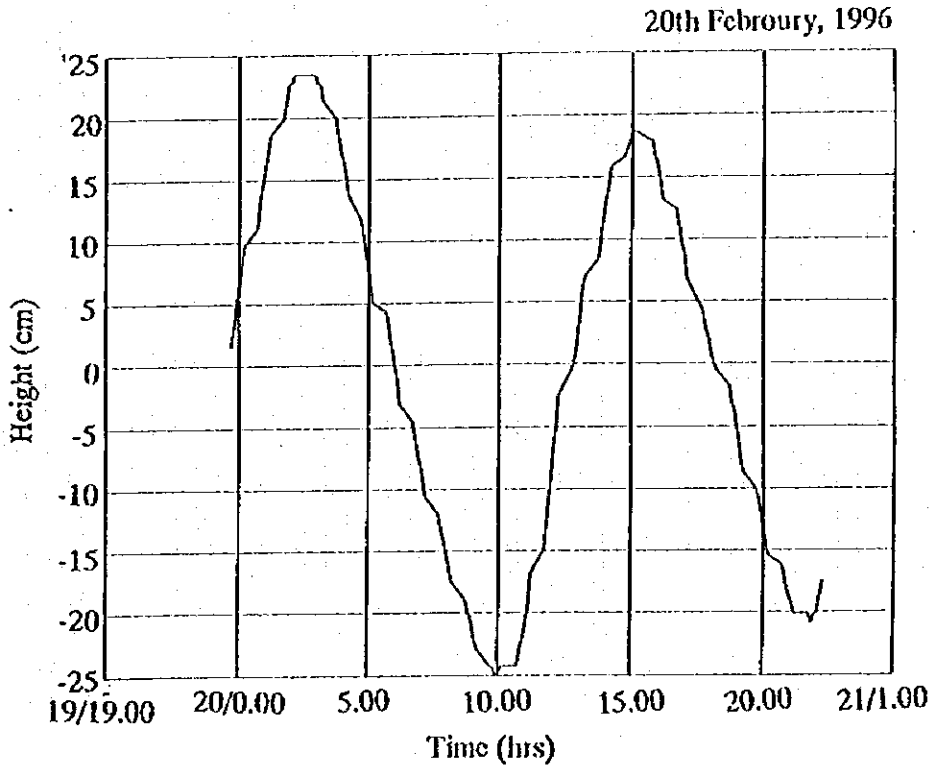



FIGURE A.4.8.5 Tidal Variation at Kelani river Mouth (NE Monsoon)